Determination of Public Land (Rangeland) Health for 65029 WILCOX WELLS

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate the local indicators were completed for this allotment. While habitat parameters may meet the Biotic standard, the habitat requirements for Special Status Species (lesser prairie chicken and sanddune lizard) habitat are a concern. Factors such as oil and gas activities and the associated infra-structure, the mesquite encroachment in some areas and the low composition of the tall grass species required for nesting success must continue to be addressed to improve the existing habitat and prevent lost of habitat from fragmentation.

Based on the assessments, it is my determination that public land within Wilcox Wells allotment #65029, meets the Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered, and Special Status Species standard. There are no public land Riparian areas on this allotment, therefore this standard was not addressed.

/s/ T. R. Kreager	09/28/2005
Assistant Field Manager	Date

Standards of Public Land Health
Evaluation of 65029 WILCOX WELLS Allotment
[07/18/2005]

The Roswell Field Office conducted rangeland health assessments at eight (8) study sites within the Wilcox Wells allotment 65029. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
65029-ANTELOPE-D072	X			X	*		N/A		
65029-APACHE-D069 (*)	X			X	*		N/A		
65029-EAST #1 (NO)-D073	X			X	*		N/A		
65029-EAST #2 (SE)-D074	X			X	*		N/A		
65029-FIELDS-D070 (*)	X			X	*		N/A		
65029-SAGE-D068 (*)	X			X	*		N/A		
65029-SOUTH #3-D075	X			X	*		N/A		
65029-TWIN MILLS-D071	X			X	*		N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for public land on Wilcox Wells allotment #65029. Ten (10) of these assessed soil site stability, 11 hydrologic function and 13 biotic integrity. These qualitative assessments in conjunction with previous data collected on eight study locations within this allotment were used to make rangeland health determinations. Quantitative evaluations are performed by the Roswell Field Office, which include some or all of the following: ground and vegetative

cover and composition, production, frequency and ecological condition. These collections which were initiated in the late 1970's/early 1980's, are scheduled and conducted approximately every 5 years.

Eight CP-2 ecological sites were assessed on this allotment; each corresponding to a different pasture. Two are Deep Sand, five Sandy Plains, and one Loamy respectively. The two CP-2 Deep Sand ecological sites, East #2 (SE) and Apache assessed are Roswell-Jalmar fine sands, on hilly high terraces in the eastern part of the survey area. Slope is 0-25 percent with elevation between 3,900 ft/1,182 m and 4,100 ft/1,242 m. East #2 (SE) Pasture, the first deep sand site is 2,583 ac/1,046 ha in size. The majority of indicators assessed rated in the Slight to Moderate range. Indicators rating Moderate were pedestals and/or terracettes, wind-scoured blow-outs and/or depositional areas, soil sirface resistance to erosion, functional/structural groups, annual production and physical crusts. Little bluestem (Schizachyrium scoparium) was elevated above the soil surface especially in the depressions and flow patterns. No roots were exposed however. Wind-scoured blowouts were occasionally present, with vegetation attempting to fill in some barren areas. The soil site stability test indicated that the interspace ped sample melted quite readily suggesting reduced organic matter. The functional groups were reduced for little and sand bluestem (Andropogon hallii). Shinnery oak (Quercus havardii) and sand sage (Artemesia filifolia) were the dominate shrubs and are replacing some of the grasses. The annual production of an estimated 500 lbs/ac or kg.ha is 1/4 of the potential for the ESD (Ecological Site Description) for normal years. This estimate takes into account all forage growth over the last year. A weak physical crust still exists but is only a minor component. The forb component is adequate with buckwheat (Eriogonum spp,) and aster (Aster spp.) vegetating the dunes and depressions. Livestock were observed but were using the far east more level ground of the pasture. All other indicators rated None to Slight with minor departures from normal ranges of variability.

Apache Pasture, with an acreage of 1,110 or 449 hectares exhibited Moderate deviations from normal ranges of variability for the majority of indicators with soil and hydrologic attributes. No livestock were observed here as the distance to water may be too far to travel to this particular corner of the pasture. Water flow patterns were longer than expected with some instability and deposition. Pedestals were evident on the bluestems especially in depressional areas where soil has eroded. Bareground was estimated at 60 percent which approaches and exceeds the upper end of the range expected and the long-term average rating Moderate to Extreme. Wind-scoured blowouts were occasionally present with litter piling in depressional areas and against obstructions. The soil ped interspace sample melted rapidly, but still contained some organic matter. Functional groups rate Moderate with shinnery oak, mesquite (Prosopis glandulosa) and yucca (Yucca spp.) comprising a majority of vegetative cover. Sand and little bluestem, dropseed (Sporobolus spp.) and threeawn (Aristida spp.) can still be found but in reduced amounts and yet to commence reproduction, perhaps from lack of precipitation so far this growing season. Despite these Moderate departures, the amount of litter exceeds what is expected for this site with an estimate of 70 percent. Physical crusting remains weak with breaks in continuity. All other indicators fall within the normal range of variability.

Antelope Pasture, the lone Loamy ecological site is 725 acres/293 hectares in size on a Ratliff/Redona soil association, loam surface on high terraces in the eastern part of the survey area on 0-2 percent slopes. Elevation is between 3,800 ft/1,152 m and 4,300 ft/1,303 m. Located just off Nogeezi Road, this site is enroute to an abandoned well pad which has vegetated with snakeweed (Gutierrezia sarothrae). No livestock are presently in this pasture, although there does seem to be evidence of past use. The cattle appear to have been removed this spring. Indicators rated Slight to Moderate for the most part except for functional groups, litter amount, annual production and reproductive capability. The panicum grasses, particularly Hall's panicun (Panicum hallii) and vine mesquite (Panicum obtusum) are very much reduced along with black grama (Bouteloua eriopoda). This along with blue grama (Bouteloua gracilis) forming a mat for the ground cover and no new growth and vegetating leaders for vine mesquite, warrants a Moderate rating for functional/structural groups. The forb component however, is diverse. Stickleaf (Mentzelia spp.), leatherleaf croton (Croton spp.) and plantain (Plantago spp.) can be found in adequate quantities. The spring annuals however are drying up and giving way to warm season perennials. Annual production is somewhat reduced with a current estimate of 400 lbs/ac or kg/ha at only 40 percent of potential. Reproductive capability of all the perennials is limited as the majority of tillers/leaders are missing. Tobosa (Pleuraphis mutica) and burrograss (Scleropogon brevifolius), found along the two-track also exhibit this characteristic. The anticipated monsoons which have not manifested themselves and livestock/wildlife/insect herbivory no doubt accounts for these limitations and/or absence of growth. All other indicators exhibited normal ranges of variability from established parameters.

Twin Mills and Fields Pastures both are also Ratliff-Redona soil associations but gently undulating. Twin Mills with an area of 329 acres/133 hectares has cattle present. The livestock however appear holding to the water approximately 1/2 mile from the site. The majority of indicators assessed rated None to Slight to Slight to Moderate and well within the normal range of variability. A fairly uniform distribution of litter exists forming a mulch layer condusive to good range condition. Soil surface resistance to erosion is Moderate however as the organic matter is reduced somewhat. This suggests the litter has yet to decompose and incorporate into the soil. Functional groups rates Moderate as there is an obvious reduction in the bluestem. Shinnery oak, mesquite and snakeweed are in higher composition than expected and scattered throughout, with potential to eventually become common. Invasive plants, specifically mesquite and snakeweed are scattered and rate Moderate. Black grama and some panicums are found along the two-track from the water. Sand sage is observed but in lesser amounts.

Fields Pasture is 395 acres or 160 hectares in size. This site is located along a two-track from an active pump jack location, which has been disturbed and vegetated with mesquite. Influences from this pad are minimal however. No livestock were present, but past use is evident on little bluestem. The majority of indicators rates Moderate for this site. Water flow patterns are longer than expected. Minor erosion is occurring with some instability. Soil horizon and surface resistance to erosion are moderately compromised. An obvious horizon loss has left some roots exposed and moderate reductions in organic matter content. Little bluestem is elevated along flow paths and within depressional areas

between small dunes. There are numerous wind-scoured blowouts and depositional areas. These barren areas are quite common here. A Moderate to Extreme rating was given this indicator. Functional/structural groups have been reduced. The bluestems are reduced in favor of threeawn. Annual production is 1/2 of potential. The current estimate is 500 lbs/ac or kg/ha. Yucca is the major shrub besides shinnery oak and scattered throughout. A weak physical crust with breaks in continuity exists just under the sand and remains a very minor component. Some forbs can be found along the two-track such as croton and silverleaf nightshade (Solanum elaengifolium).

Sage Pasture site is on private land. The acreage is 290 or 117 hectares. No livestock are present here on a Faskin-Malstrom soil association, gently undulating. Slope is 0-2 percent on elevations between 3,900 ft/1,182 m and 4,100 ft/1,242 m. The majority of the following indicators assessed rated at least Moderate. Pedestals on threeawn, sand sage and little bluestem elevated the plants in flow paths and interspaces. Some A-horizon containing the most organic matter has either blown away or eroded through time. No roots were exposed and no terracettes observed yet. Bareground was estimated at 60 percent or more in some areas and rates Moderate to Extreme, exceeding the long-term average and ESD parameters as well. Wind-scoured blowouts were occasionally present with some dunes void of vegetation. Some depressional areas were attempting to revegetate however. Litter was piling up against obstructions and in depressional areas and has moved from it's point of origin from wind and water erosion processes. The interspace soil ped sample melted quite rapidly in the soil site stability test suggesting reduction in organic matter. Infiltration has been compromised especially between mesquite dunes and interspaces, with the potential to be negatively affected. Encroachment of this invasive, has inhibited perennial grass production. Invasive plants rates Moderate with potential to be common. The absence of grama grass and dropseed component is obvious here. Annual production is only at 40 percent of potential as the majority is currently comprised of shrubs, ie, shinnery oak, sand sage and mesquite. Rest and brush management is recommended here.

South #3 Pasture is located just southeast of a well pad. Mesquite has invaded this well pad, and there remains potential for spreading from this site. This site is 482 acres/195 hectares in size on a Faskin fine sand, with 0-2 percent slope. This soil is well drained on high terraces in the eastern part of the survey area. Elevation is between 3,800 ft/1,152 m and 4,200 ft/1,273 m. Cattle are present here but not concentrated in any one location and widely distributed. Indicators of concern rating Moderate are pedestals which occur on sand sage and have elevated these plants. No roots are exposed however. Resistance to erosion is reduced in the interspace soil ped sample. The A-horizon has been compromised in some places suggesting a reduction in organic matter content and degradation or soil loss. Hairy grama (Bouteloua hirsuta) and dropseed are missing along with a reduction in the grama grass component as a whole. Shinnery oak, threeawn and sand sage have replaced these species. Functional/structural groups as a result rates Moderate. Annual production is just a fraction of potential estimated at 400 lbs/ac or kg/ha. Most of this production is shrubs and threeawn however. This indicator rates Moderate. All other indicators rate None to Slight and Slight to Moderate and fall within normal ranges of variability.

East #1 (NO) Pasture site is 249 acres/101 hectares in size on a Jalmar-Roswell-Pyote soil association, moderately undulating. This association is on high terraces in the eastern part of the survey area with 0-15 percent slope with elevation between 3,900 ft/1,182 m and 4,100 ft/1,242 m. No livestock were present in this pasture just off Hanover Road south of Railroad Mountain Road. Most of the indicators assessed rated Slight to Moderate to None to Slight. The shrub to grass and forb component is sufficient and the compositional arrangement of plants is fairly within the normal range with some exceptions. Departures are minimal from ESD and reference areas. The only indicators of concern are soil surface resistance to erosion, functional/structural groups, and invasive plants. There exists some reduction in organic matter content in the interspace soil ped sample. Hairy grama, sideoats grama (Bouteloua curtipendula) and little bluestem are on site but in reduced amounts. Threeawn, sand sage, shinnery oak and yucca are in abundance, but not in stages to inhibit this site's potential. Snakeweed is scattered with no other invasives presently of concern. Mule deer and pronghorn inhabit this pasture and surrounding vicinity. Lagomorphs are in abundance with grasshoppers and other insects plentiful. Oil and gas operations so far have only minimally impacted this site.

Hydrology -

Antelope Pasture - The litter amount rated in the moderate category. The reduction in litter amount suggests that dry conditions have negatively affected growing conditions decreasing litter produced. Additionally, the decrease in litter amount can have the effect of increasing bare soil. All other indicators rated none to slight or slight to moderate indicating a healthy ecological condition in relation to those indicators.

Apache Pasture - The water flow patterns indicator rated moderate. Erosion is occurring with some instability and deposition with water flow patterns longer than expected. The pedestals and/or terracette indicator rated moderate. The recent dry conditions in combination with wind/water erosion has possibly reduced the amount of plant cover and decreased soil infiltration which may have increased the degree of pedestaling on plants and rocks. Pedestaling is occurring in flow paths and depressions. The bareground indicator rated moderate to extreme. The amount of bareground has possibly increased due to recent dry conditions and wind/water erosion processes. Bare ground is estimated currently at 60 percent. The wind-scoured, blowouts, and/or deposition area indicator rated moderate. The decrease in strength of physical soil crusts and/or absence, wind velocity, surface dryness and roughness, and reduced plant cover has possibly increased the amount of wind-scoured blowouts and deposition areas. Wind-scoured blowouts are scattered. The litter movement indicator rated moderate. The decrease in litter movement suggests that dry weather have negatively affected growing conditions decreasing the amount produced and it's mobility. Litter is found in depressions and against obstructions. Soil surface resistance to erosion rated moderate, with the stability test showing a rapid melting of interspace ped samples. Organic matter is lacking on this site. The physical/biological crust indicator rated moderate. The soil crusts were a minor component of interspaces. All other indicators rated none to slight or slight to moderate indicating a healthy ecological condition in relation to these indicators.

East #1 pasture - Soil surface resistance to erosion rated in the moderate category, with resistance reduced throughout the site. Organic matter is lacking on this site. All other indicators rated none to slight or slight to moderate indicating a healthy ecological condition in relation to those indicators.

East #2 pasture - The pedestals and/or terracette indicator rated moderate. The recent dry conditions in combination with wind/ water erosion has possibly reduced the amount of plant cover and possibly decreased soil infiltration which may have increased the degree of pedestaling on grasses. Wind-scoured, blowouts, and or deposition area indicator rated moderate. The decrease in the strength of physical soil crusts and/or absence, wind velocity, surface dryness and roughness, and the reduced amount of plant cover has possibly increased wind-scoured blowouts and deposition areas. Wind-scoured blowouts are scattered throughout. Soil surface resistance to erosion rated in the moderate category, with the site stability test indicating a rapid melting of the interspace ped sample. Organic matter is lacking on this site. The physical/biological crust indicator rated moderate. The soil crust was physical but weak for the interspaces.

Fields Pasture - The water flow patterns indicator rated moderate. Erosion is occurring with some instability and deposition. Water flow patterns are longer than expected. The pedestals and/or terracette indicator rated moderate. The recent dry conditions in combination with wind/water erosion has possibly reduced the amount of plant cover and decreased soil infiltration. This may have increased the degree of pedestaling on grasses. The bare ground indicator rated moderate. The amount of bareground has possibly increased due to recent dry conditions and wind/water erosion processes. The bareground is currently estimated at 60 percent. The wind-scoured blowouts, and/or deposition area indicator rated moderate to extreme. The decrease in the strength of physical soil crusts and/or absence, wind velocity, surface dryness and roughness, and reduced amount of plant cover has possibly increased the amount of wind-scoured blowouts and deposition areas. Wind-scoured blowouts are common throughout. Litter movement rated moderate. The decrease in litter movement suggests dry weather has negatively affected growing conditions reducing the amount produced and it's mobility. Litter is located against obstructions and in depressions. Soil surface resistance to erosion rated in the moderate category, with the stability test showing a rapid melting of interspace ped samples. Organic matter is lacking on this site. The soil surface loss or degradation rated moderate. The recent dry conditions, decrease in the strength of physical crusts and/or absence, wind velocity, surface dryness, and reduced amount of plant cover has possibly increased soil loss to degradation. The loss of soil horizon has resulted in increased exposure of rocks and pebbles. The physical/biological crust indicator rated moderate. The soil crusts were only found in protected areas and are a minor component in interspaces. There is a weak physical crust. All other indicators rated none to slight or slight to moderate indicating a healthy ecological condition in relation to these indicators.

Sage Pasture - The water flow patterns indicator rated moderate. Erosion is occurring with some instability and deposition. Water flow patterns are longer than expected. The pedestals and/or terracette indicator rated moderate. The recent dry conditions in combination with wind/water erosion has possibly decreased the amount of plant cover

and soil infiltration. This may have increased the amount of pedestaling on grasses and shrubs. The wind-scoured blowouts, and/or deposition area indicator rated moderate. The decrease in the strength of physical soil crusts and/or absence, wind velocity, surface dryness and roughness, and reduction of amount of plant cover has possibly increased wind-scoured blowouts and/or depositional areas. Wind-scoured blowouts are scattered throughout. The litter movement indicator rated moderate. The decrease in litter movement suggests that the dry weather has negatively affected growing conditions reducing amounts produced and it's mobility. Litter is found in scattered concentrations and depressions. Soil surface resistance to erosion rated in the moderate category, with the stability test showing a rapid melting of interspace ped samples. Organic matter is lacking on this site. The soil surface loss or degradation rates moderate. The recent dry conditions, decrease in the strength of physical crusts and/or absence, wind velocity, surface dryness, and reduction amount of plant cover has possibly increased soil surface loss to degradation. All other indicators rated none to slight or slight to moderate.

South #3 Pasture - The pedestals and/or terracette indicator rated moderate. The recent dry conditions in combination with wind/water erosion has possibly decreased the amount of plant cover and soil infiltration. This may have increased the degree of pedestaling on plants. Soil surface resistance to erosion rated in the moderate category, with the stability test showing an increased melting of interspace and under canopy ped samples. Resistance and organic matter is reduced throughout the site. The soil surface loss or degradation rated moderate. The recent dry conditions, decrease in the strength of physical crusts and/or absence, wind velocity, surface dryness, and reduction of plant cover has possibly increased soil horizon loss to degradation. There is a decrease in organic matter and increase in soil loss from canopy and interspace samples. All other indicators rated none to slight or slight to moderate indicating a healthy ecological condition in relation to these other indicators.

Twin Mills Pasture - Soil surface resistance to erosion rated in the moderate category. Resistance and organic matter is reduced throughout the site. All other indicators rated none to slight or slight to moderate indicating a healthy ecological condition in relation to those indicators.

Wildlife - Evaluation of the integrity of biotic community considered several indicators as attribute indices for the area of interest. Biotic indicators are interrelated with several other indicators, including soil/site stability, hydrologic function, and vegetation. Several indicators are singularly biotic and address the vegetative aspect of the ecological site description, such as functional/structural groups and plant mortality & decadence.

In addition to the standard worksheet biotic factors, four specific wildlife indicators and descriptors are included in this evaluation. A unique assemblage of terrestrial species and avifauna can be expected to use the Mescalero Sands ecosystem. Of significance are the lesser prairie chicken and sand dune lizard known only to occur within this ecosystem. The vegetation community of interest is the shinnery oak-tall grass type only found in this portion of the Field Office area.

Key habitat components include sand bluestem, shinnery oak, sand dune lizard habitat features (dune blowouts), and lesser prairie chicken habitat features (booming grounds & nesting areas). The amount, condition and juxtaposition of these habitat features are used as habitat indicators for this assessment.

Key attributes/indicators related to LPC habitat are Functional/Structural Groups, Annual Production, and Invasive Plants. Key attribute/indicators related to SDL habitat are Bare Ground, Wind-Scoured Blowouts, Deposition Areas and Annual Production. SDL are generally associated with blowouts that are unstabilized, i.e., microhabitats affected by the physical attributes of dunes and vegetation.

Other important wildlife species and their habitats, such as desert mule deer, pronghorn, a variety of game and non-game species, are considered in the assessment but not the focus of the evaluation. The assessment begins by determining if the site is within "Core Areas" for lesser prairie chicken, or contains potential/occupied habitat for the sand dune lizard.

In general, this is a large allotment with 8 pastures. The entire allotment falls within the LPC Core Area. The northern portion of the allotment falls within the SDL habitat range. This overall evaluation will focus on those key pastures for LPC and SDL habitat, and will combine other pastures based on the size of the pasture and limited public land acreage.

East #2 Pasture - Most leks are found in this pasture along with potential habitat for SDL. In general, a moderate rating is assigned for LPC habitat due to decreased abundance of tall grasses such as sand bluestem, and a corresponding increase in shrubs such as shinnery oak and sand sage. This is reflected in the ratings for Functional/Structural Groups and Annual Production which also received moderate ratings. This year, lek activity is stable with counts showing an upward trend. SDL habitat exists and is spotty on the landscape. At this level of assessment, a general rating of moderate is assigned until such time detailed surveys of species and habitat are conducted.

Apache Pasture - A small but entirely public land pasture with a few leks sites. It is adjacent to pastures on another allotment supporting lek sites. The rating is slight to moderate due to low lek density and spotty SDL habitat.

East #1 Pasture - Only a small percentage of this relatively large pasture is public land. Wildlife indicators are rated moderate due to oil and gas development.

South #3, Fields, Antelope, Twin Mills, Sage Pastures - These small pastures (averaging 444 acres) include some public land in each pasture. Overall, the wildlife indicators are influenced by Functional/Structural Groups, Annual Production, Invasive Plants, and Reproductive Capability assessments. All rated Moderate except Antelope Pasture (Slight to Moderate) which is the largest of the five pastures and is mostly a loamy rangesite.

In the professional opinion of the Assessment Team, public land within Wilcox Wells allotment #65029 meets the Upland and Biotic standards. There are no Riparian issues

present, therefore this standard was not addressed. See site notes and recommendations for further information regarding this assessment.

The (*) indicates that the assessment had one or more indicator(s) rated moderate/extreme or extreme. These indicators are:

- Bare Ground
- Wind-scoured, Blowouts, and/or Deposition Areas

These indicators by themselves are not enough to rate the site as not meeting a standard but may warrant future monitoring.

Recommendations: Brush control is recommended for those sites with Moderate and higher ratings for invasive plants. The current livestock rotational scheme used by the allotee should remain in place, while resting those pastures with reductions in forage.

The well pads with mesquite and other shrubs encroaching should be recommended for brush control to curtail the spread of these invasives to other parts of the pasture. Perhaps individual hand application on targeted well pads is the method to partake.

Wildlife - Consider pasture re-alignments, especially to protect public lands in the smaller pastures, that will allow control of grazing use and rest on public land. Continue to evaluate areas needing vegetative manipulations such as mesquite control. Consider prescribed fire to aid in the maintenance of grasslands. Continue to monitor livestock grazing use in light of drought periods. Ensure existing oil and gas developments such as roads, pipelines, powerlines, storage facilities are maintained, or areas impacted by such operations are rehabilitated upon abandonment.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-ANTELOPE-D072			
Legal Land Desc	NWSW 17 0080S 0310E Meridian 23	Acreage	725
Ecosite	070BY052NM LOAMY CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/15/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RBA	Soil Taxon Name	RATLIFF
Texture Class	NM644 FSL	Soil Phase	RATLIFF-REDONA
Texture Modifier	NM644 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:	No livestock presently, but evidence of past use exists, especially on the blue grama which has yet to begin growth from the homogeneous mat formed. It appears the cattle were removed late in 2004 or early 2005. The site is enroute along the two-track to an abandoned well pad which has vegetated with snakeweed.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						

S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground				X	
Comments:	Current estimate is 40%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	What litter exists has been displaced or blown away.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Resistance is slightly reduced throughout the site.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	The presence of the bluegrama mat is allowing for adequate infiltration.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	Black grama is missing; Hall's panicum is reduced. The forb component mostly plantago is present but appears to be curing and dieing back.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:	Only small pockets of litter can be found and fall in the bottom end of the range expected.					
B	Annual Production			X		
Comments:	The production is somewhat difficult to estimate due to the absence of shoots from the bluegrama. The vine mesquite leaders are present however. The current estimation is 300-400 lbs/ac or kg/ha,but it appears misleading.					
B	Invasive Plants				X	

Comments:	Aside from the occasional snakeweed, no real invasive weeds exist in the immediate area. The far reaches to the east do have mesquite however.					
B	Reproductive Capability of Perennial Plants			X		
Comments:	Past use and other factors have left the perennial grass component at 1/2" to 1" stubble heights throughout. The absence of precipitation has further prevented the grass from commencing growth for the current season. Reproductive capability is limited as a result.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	A good physical crusts does exist.					
B	Wildlife Habitat				X	
Comments:	This is a flat blue grama grassland habitat type with hardly any brush species.					
B	Wildlife Populations				X	
Comments:	No specific wildlife population information at this time. The primary wildlife species of concern are grassland bird species, pronghorn antelope and some upland game birds.					
B	Special Status Species Habitat					X
Comments:	None know to occur. Within the LPC core area but is not considered LPC habitat.					
B	Special Status Species Populations					X
Comments:	Two documented historic lek sites with no activity in the past ten years.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	6	4
H	Hydrologic	0	0	1	7	3
B	Biotic	0	0	4	5	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need*

More Info, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	0	10
Hydrologic		0	1	10
Biotic	There is virtually no current perennial grass vegetative growth. The area must be allowed to rest to allow the grass ample opportunity to use it's reserves for growth and reproduction.	0	4	9

Site Notes: This site is located off Nogeezi Road and is mostly a blue grama complex with other less dominate grass species such as tobosa, vine mesquite and Hall's panicum. An adequate forb component exists with croton, solanum, mentzelia and plantago. Most of the cool season forbs have cured and are drying up due to the warmer conditions. Vine mesquite has produced leaders which have rooted in some places. The site at this time has not received adequate precipitation to begin growing, so every perennial grass species still appears dormant. The blue grama has yet to grow and set seed, although a mat exists which is making up most of the ground cover. This grass has been utilized and has not produced vegetatively.

No livestock are in this pasture at the present time. Snakeweed and mesquite can be observed at the far reaches due east, but pose no real concern in regards to encroachment. There also exists an old well pad in the vicinity which is vegetated with snakeweed. The witness post and cage are missing.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-APACHE-D069			
Legal Land Desc	SESE 29 0080S 0310E Meridian 23	Acreage	1110
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/18/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RPD	Soil Taxon Name	ROSWELL
Texture Class	NM644 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM644 FINE SANDS,HILLY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:	No livestock observed here. An old two-track road exists which may have connected this allotment with the one south for access. There appears to be a gravel pit or drill pad to the south on the other side of fence. Caliche exists on this road , but has long since been abandoned.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns			X		
Comments:	Water flow patterns are longer than expected.					

S H	Pedestals and/or Terracettes			X		
Comments:	Pedestals in flow paths and depressional areas on little bluestem especially.					
S H	Bare Ground		X			
Comments:	60% is the current estimate.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:	Occasionally present.					
H	Litter Movement			X		
Comments:	Litter is in depressional areas and piling against obstructions in some places.					
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Interspace soil ped sample readily melts using the soil stability test.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	Reduction is perennial grass does exist.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Litter in the form of shinnery leaves, grass and yucca come together for at least a 70% estimate and higher in some places.					
B	Annual Production				X	
Comments:	600 lbs/ac or kg/ha is the current estimate, slightly exceeding the long-term average of 564.					
B	Invasive Plants					X
Comments:	Mesquite and yucca are almost non-existent.					
B	Reproductive Capability of					X

	Perennial Plants					
Comments:	The perennial grass has yet to start growing.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Minor component in interspace.					
B	Wildlife Habitat				X	
Comments:	This is a shinnery oak/dune habitat type exhibiting diverse vegetation with shrubs and mid to tall grasses in a mosaic over the landscape.					
B	Wildlife Populations				X	
Comments:	No specific wildlife population data at this time. The primary species of concern, other than those identified below, are pronghorn antelope, desert mule deer, upland game species and a variety of non-game wildlife species.					
B	Special Status Species Habitat			X		
Comments:	Within the LPC core area. The shinnery oak/tall grass vegetation community supports species unique to the Mescalero Sands ecosystem. Lek sites are available within the pasture. There are some habitat disturbances from oil and gas development to date. Nesting habitat appears to be a factor that can be improved, specifically tall grass species such as sand bluestem. Habitat for SDL is present but spotty. Dune stability is a factor in SDL populations.					
B	Special Status Species Populations				X	
Comments:	LPC are known to occur in the area. Several lek sites have been documented over the years. The pasture is adjacent to other areas supporting active lek sites. The active leks in the pasture exhibit stable counts. No specific SDL populations have been documented to date. Populations may occur in unstabilized dune habitat (microhabitats).					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	1	4	2	3

H	Hydrologic	0	1	4	2	4
B	Biotic	0	0	3	5	5

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Indicators rated as moderate are within the expected range for a Deep Sand site.	1	4	5
Hydrologic	Indicators rated as moderate are within the expected range for a Deep Sand site.	1	4	6
Biotic		0	3	10

Site Notes: Little bluestem, sand bluestem, dropseed, threeawn and shinnery dominate the site. No current growth can be seen yet, although the shinnery has long since budded. Forb species are plentiful. No livestock were observed, although the site is accessible from the Twin Mill Windmill. The distance may be too great for livestock to travel from these areas. Lagomorph species are in abundance with jackrabbits and cottontails both on site.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-EAST #1 (NO)-D073			
Legal Land Desc	NWSW 29 0070S 0310E Meridian 23	Acreage	249
Ecosite	070BY055NM SANDY PLAINS CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/14/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	JRC	Soil Taxon Name	JALMAR
Texture Class	NM644 FS	Soil Phase	JALMAR-ROSWELL-PYOTE
Texture Modifier	NM644 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:	No livestock are utilizing this pasture that could be observed. The site is fairly undisturbed and shows no signs from oil and gas activity.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	

Comments:						
S H	Bare Ground				X	
Comments:	Current estimate is 40%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	The wind-scoured areas on the winward side are vegetating over quite adequately.					
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Resistance is reduced throughout.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	The composition of perennial grass species is shifting towards a shrub matrix, but not critical. The threeawn component is increasing.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Current estimate is 30-40%.					
B	Annual Production				X	
Comments:	Current estimation is approximately 700 lbs/ac or kg/ha. This includes all perennial vegetation.					
B	Invasive Plants			X		
Comments:	Snakeweed is scattered.					
B	Reproductive Capability of					X

	Perennial Plants					
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	A weak physical crust exists, but remains fairly intact with some breaks.					
B	Wildlife Habitat			X		
Comments:	This is a shinnery oak/dune habitat type exhibiting diverse vegetation with shrubs and mid to tall grasses in a mosaic over the landscape.					
B	Wildlife Populations			X		
Comments:	Muledeer and pronghorn observed. No specific wildlife population data at this time. The primary species of concern, other than those identified below, are pronghorn antelope, desert mule deer, upland game species and a variety of non-game wildlife species.					
B	Special Status Species Habitat			X		
Comments:	Within the LPC core area. The shinnery oak/tall grass vegetation community supports species unique to the Mescalero Sands ecosystem. Lek sites are available within the pasture. There are habitat disturbances from oil and gas development. Documented lek sites do occur on abandoned oil and gas pads. Roads are fragmenting habitat. Nesting habitat appears to be a factor that can be improved, specifically tall grass species such as sand bluestem. Habitat for SDL is present but spotty. Dune stability is a factor in SDL populations.					
B	Special Status Species Populations			X		
Comments:	LPC are known to occur in the area. Several lek sites have been documented over the years. The active leks in the pasture exhibit stable counts. No specific SDL populations have been documented to date. Populations may occur in unstabilized dune habitat (microhabitats).					
Part 3. Summary						
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.						
Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight

S	Soil	0	0	1	6	3
H	Hydrologic	0	0	1	7	3
B	Biotic	0	0	7	3	3

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Indicators rated as moderate are within the expected range for a sandy plains site.	0	1	9
Hydrologic	Indicators rated as moderate are within the expected range for a sandy plains site.	0	1	10
Biotic	Biotic indicators show moderate departure but remain sufficient. Continued evaluation to ensure the biotics remain at an acceptable level is recommended. Special status species (LPC) habitat is a concern.	0	7	6

Site Notes: East (NO) Pasture is located upland and remains fairly undisturbed from the oil and gas operations in the vicinity. Although no livestock are in this pasture at the moment, the current rotational grazing scheme which the allotee is employing should continue. Deferment to allow perennial grass to reproduce seed and/or tillers may be the most prudent plan of action.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-EAST #2 (SE)-D074			
Legal Land Desc	NWNE 9 0080S 0310E Meridian 23	Acreage	2583
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/18/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RPD	Soil Taxon Name	ROSWELL
Texture Class	NM644 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM644 FINE SANDS,HILLY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:	No livestock seen but oil and gas activity is abundant in the area.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments:	Pedestals on bluestem.					
S H	Bare Ground				X	

Comments:	Now the stimate is 40%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:	Occasionally present with vegetation on the side of the dunes.					
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Interspaces soil ped sample readily melts.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Current estimate is 50%.					
B	Annual Production				X	
Comments:	500 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants					X
Comments:						
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological Crusts			X		
Comments:	A weak physical crust exists as a minor component of the interspace.					

B	Wildlife Habitat			X		
Comments:	This is a shinnery oak/dune habitat type exhibiting diverse vegetation with shrubs and mid to tall grasses in a mosaic over the landscape. Note: An adjacent pasture to the south was chemically treated in 1991.					
B	Wildlife Populations			X		
Comments:	Muledeer and pronghorn observed. No specific wildlife population data at this time. The primary species of concern, other than those identified below, are pronghorn antelope, desert mule deer, upland game species and a variety of non-game wildlife species.					
B	Special Status Species Habitat			X		
Comments:	Within the LPC core area. The shinnery oak/tall grass vegetation community supports species unique to the Mescalero Sands ecosystem. Lek sites are available within the pasture. There are habitat disturbances from oil and gas development. Documented lek sites do occur on abandoned oil and gas pads. Roads are fragmenting habitat. Nesting habitat appears to be a factor that can be improved, specifically tall grass species such as sand bluestem. Habitat for SDL is present but spotty. Dune stability is a factor in SDL populations.					
B	Special Status Species Populations			X		
Comments:	LPC are known to occur in the area. Several lek sites have been documented over the years. The active leks in the pasture exhibit stable counts. No specific SDL populations have been documented to date. Populations may occur in unstabilized dune habitat (microhabitats).					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	4	3	3
H	Hydrologic	0	0	2	6	3
B	Biotic	0	0	6	4	3

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the

table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Indicators rated as moderate are within the expected range for a Deep Sand site.	0	4	6
Hydrologic	Indicators rated as moderate are within the expected range for a Deep Sand site.	0	2	9
Biotic	Some biotic indicators show moderate departure but remain sufficient. Continued evaluation to ensure the biotics remain at an acceptable level is recommended. Special status species (LPC) habitat is a concern.	0	6	7

Site Notes: This site is a typical deep sand with shinnery dominating. Access is via oil and gas roads. The actual access to this site is over very sandy undulating unstable soil from a caliche surfaced gas well pad. This activity is quite common throughout the area.Blowouts are seen but have litter and some vegetation on the sides. No livestock were present at the time of assessment as the cattle chose to remain on the flatter more accessible ground to the southeast.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-FIELDS-D070			
Legal Land Desc	NESW 8 0080S 0310E Meridian 23	Acreage	395
Ecosite	070BY055NM SANDY PLAINS CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/15/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RBA	Soil Taxon Name	RATLIFF
Texture Class	NM644 FSL	Soil Phase	RATLIFF-REDONA
Texture Modifier	NM644 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns			X		
Comments:	The water flow patterns appear unstable and longer than expected.					
S H	Pedestals and/or Terracettes			X		
Comments:	Pedetaling is active on the little bluestem clumps in the depressional areas as well as flow paths.					

S H	Bare Ground			X		
Comments:	Slightly exceeds the upper end at current estimates of 50%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas		X			
Comments:	These wind-scoured areas void of vegetation are quite common.					
H	Litter Movement			X		
Comments:	Litter is piling up against obstructions and in depressional areas.					
S H B	Soil Surface Resistance to Erosion			X		
Comments:						
S H B	Soil Surface Loss or Degradation			X		
Comments:	Because of the loss of soil horizon layers, elevated plants have resulted. Pebbles and rocks have migrated towards the surface.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Shinnery litter and plant cover has helped with infiltration.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	There is an obvious reduction in the amount of bluestem and grama grass. Stipa species is abundant.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	30% is the current estimate.					
B	Annual Production			X		
Comments:	Threeawn, shinnery, yucca and sand sage make up most of the production. The current estimate is 500 lbs/ac or kg/ha. Stipa species is also very abundant, probably New Mexico feathergrass.					
B	Invasive Plants				X	
Comments:	Yucca is scattered.					
B	Reproductive Capability of Perennial Plants				X	

Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	The physical crust is very weak and is a very minor component.					
B	Wildlife Habitat			X		
Comments:	A flat grassland aspect with some shinnery oak present. Primary grass species is blue grama. Some oil and gas development in the area.					
B	Wildlife Populations			X		
Comments:	No specific wildlife population data to date. Species of concern are pronghorn antelope, upland game birds and a variety of non-game wildlife.					
B	Special Status Species Habitat					X
Comments:	A few historical lek sites that have been inactive for a number of years.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	1	5	1	3
H	Hydrologic	0	0	6	2	3
B	Biotic	0	0	6	3	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not	May	Meets

		Meet	Need More Info	
Soil	The indicators rated as moderate are with the range expected for a sandy plains site.	1	5	4
Hydrologic	The indicators rated as moderate are with the range expected for a sandy plains site.	0	6	5
Biotic	Biotic indicators show moderate departure but remain sufficient. Continued evaluation to ensure the biotics remain at an acceptable level is recommended. Special status species (LPC) habitat is a concern.	0	6	7
Site Notes: No livestock are in this pasture at present. Enroute to this site is a oil pumpjack which has vegetated with mesquite. Influences from this pad are minimal however. The water flow patterns are longer than expected with pedestaling occuring on the little bluestem especially in the flow paths and depressional areas. Little bluestem also appears to be grazed throughout and is utilized to the point of possibly restricting reproductive growth. With the onset of precipitation, this grass should commence growth. Stipa species is abundant but appears virtually ungrazed. There also are wind-scoured blowouts which are common especially on the windward side of the small undulating dunes. Shinnery oak is very abundant and comprises the bulk of the litter. Barren areas are observed especially in the depressions.				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-SAGE-D068			
Legal Land Desc	SWNE 25 0080S 0300E Meridian 23	Acreage	290
Ecosite	070BY055NM SANDY PLAINS CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/15/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	FMA	Soil Taxon Name	FASKIN
Texture Class	NM644 LFS	Soil Phase	FASKIN-MALSTROM
Texture Modifier	NM644 LOAMY FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:	No livestock are present. Mesquite however is encroaching and steps may be necessary to eradicate this shrub before it becomes common and dominates.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns			X		
Comments:	Some minor erosion and instability. Patterns are longer than expected.					

S H	Pedestals and/or Terracettes			X		
Comments:	There is obvious pedestals on bluestem, threeawn and sand sage plants.					
S H	Bare Ground		X			
Comments:	Exceeds the upper end of the range expected at 60% estimate.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	Occasionally present.					
H	Litter Movement			X		
Comments:	Litter in scattered concentrations and depressions.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Rather rapid melting on the interspace soil ped sample.					
S H B	Soil Surface Loss or Degradation			X		
Comments:	There is an obvious horizon loss.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Infiltration is somewhat affected and maybe moving towards moderate.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	Absence of grama grass. Dropseed is reduced.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Current estimate is approximately 30-40%.					
B	Annual Production			X		
Comments:	Including the shrub component; the current estimate is 400-500 lbs/ac or kg/ha.					
B	Invasive Plants			X		
Comments:	Mesquite is scattered with the potential to be common with further encroachment.					
B	Reproductive Capability of				X	

	Perennial Plants					
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	A physical crust does exist, but somewhat weak.					
B	Wildlife Habitat			X		
Comments:	A hummocky shrub habitat type with mesquite, shinnery oak, sand sage. Grass species trending toward three-awns versus bluestems on this rangesite.					
B	Wildlife Populations			X		
Comments:	No specific wildlife population information at this time. The primary wildlife species of concern are pronghorn antelope, desert mule deer, upland game birds, and a variety of nongame wildlife species.					
B	Special Status Species Habitat					X
Comments:	None know to occur. Within the LPC core area but is not considered LPC habitat.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	1	3	3	3
H	Hydrologic	0	1	4	3	3
B	Biotic	0	0	6	3	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final

agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Indicators rated as moderate are within the expected range for a sandy plains site.	1	3	6
Hydrologic	The indicators rated as moderate are within the expected range for a sandy plains site.	1	4	6
Biotic	Along with the absence of perennial grass, the mesquite is encroaching at a pace that may need further evbaluation. Biotic indicators show moderate departure but remain sufficient. Continued evaluation to ensure the biotics remain at an acceptable level is recommended. Special status species (LPC) habitat is a concern.	0	6	7

Site Notes: This site is located about 1 mile from water in an area of reddish sandy soil. The pedestaling on the plants and potential for erosion is of concern. The cage is the only area where perennial grass, (dropseed) appears to have produced seed. All other areas have a reduction in this capability. Livestock should remain out of this pasture to allow the perennial grass to reproduce.

Mesquite is encroaching towards becoming common and/or dominating. Treating this site should curtail the encroachment of this shrub.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-SOUTH #3-D075			
Legal Land Desc	NWNW 8 0080S 0310E Meridian 23	Acreage	482
Ecosite	070BY055NM SANDY PLAINS CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/15/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	FaA	Soil Taxon Name	FASKIN
Texture Class	NM644 LFS	Soil Phase	FASKIN
Texture Modifier	NM644 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:	A few cattle were observed in this pasture. The influences from the well pad are minimal. Mesquite is less than scattered on the site but the well pad has numerous young and mature plants which suggests disturbance at the well pad has assisted in this plant's propogation.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		

Comments:	Elevation on sand sage especially in flow paths; no terracettes however.					
S H	Bare Ground				X	
Comments:	Current estimations range from 40-50%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Resistance is reduced throughout the site.					
S H B	Soil Surface Loss or Degradation			X		
Comments:	O.M is reduced and there appears to be some soil loss underneath the canopies and interspaces.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Infiltration remains adequate.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	Missing the grama grass component; hairy grama. Black grama is reduced.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Estimate is 30-40%.					
B	Annual Production			X		
Comments:	400 lbs/ac or kg/ha is the current estimate but is comprised mostly of shrubs and threeawn.					
B	Invasive Plants				X	
Comments:	Mesquite is less than scattered except for the well pad.					
B	Reproductive Capability of Perennial Plants					X

Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical crust is present.					
B	Wildlife Habitat			X		
Comments:	A flat mixed desert shrub habitat type, transition area from a deep sand range site to a sandy plains range site. Vegetation diversity appears to have declined.					
B	Wildlife Populations			X		
Comments:	No specific wildlife population information at this time. The primary wildlife species of concern are grassland bird species, pronghorn antelope and some upland game birds.					
B	Special Status Species Habitat					X
Comments:	None know to occur. Within the LPC core area but is not considered LPC habitat.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	3	3	4
H	Hydrologic	0	0	3	5	3
B	Biotic	0	0	6	2	5

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	The indicators rated as moderate are within the range expected for a sandy plains site.	0	3	7
Hydrologic	The indicators rated as moderate are within the range expected for a sandy plains site.	0	3	8
Biotic	Biotic indicators show moderate departure but remain sufficient. Continued evaluation to ensure the biotics remain at an acceptable level is recommended. Special status species (LPC) habitat is a concern.	0	6	7
Site Notes: The site shows very little influence from the well pad which has been abandoned. The well pad does have more mesquite present than the surrounding area with some snakeweed. Spot treatment to eradicate the mesquite should prevent it from spreading further along with individual treatments on the satellite plants in the vicinity. Cattle are present but in small amounts.				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65029-TWIN MILLS-D071			
Legal Land Desc	NESW 20 0080S 0310E Meridian 23	Acreage	329
Ecosite	070BY055NM SANDY PLAINS CP-2	Photo Taken	Y
Watershed	13060007050 WHITE LAKES		
Observers	NAVARRO/ARTHUN	Observation Date	07/14/2005
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RBA	Soil Taxon Name	RATLIFF
Texture Class	NM644 FSL	Soil Phase	RATLIFF-REDONA
Texture Modifier	NM644 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	13.44	NOAA Growing Season Precipitation	11.89
NOAA Avg Annual Precipitation	13.97	NOAA Avg Growing Season Precipitation	12.18
Disturbances and Animal Use:	Cattle present at the windmill. Old two-track from the windmill is the access to the site and has vegetated over in places.		

Part 2. Attributes and Indicators						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	

Comments:						
S H	Bare Ground				X	
Comments:	Current estimate is 40%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Some displacment, but fairly uniform in distribution.					
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Resistance apparently reduced in the interspaces and some plant canopies.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	There is a reduction in the bluestem component. The grama grass is also somewhat rerduced.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Current estimate is 40%.					
B	Annual Production				X	
Comments:	The current estimate is 600 lbs/ac or kg/ha.					
B	Invasive Plants			X		
Comments:	Mesquite and snakeweed scattered.					
B	Reproductive Capability of Perennial Plants					X
Comments:						

S	Physical/Chemical/Biological Crusts				X	
Comments:	A weak physical crust exists with breaks in uniformity.					
B	Wildlife Habitat			X		
Comments:	A rolling mixed shrub habitat type with shinnery oak, sand sage and encroaching mesquite. Three-awn is the more common grass species. The site is trending toward a shrub-dominant type.					
B	Wildlife Populations			X		
Comments:	No specific wildlife population data at this time. The primary species of concern, other than those identified below, are pronghorn antelope, desert mule deer, upland game species and a variety of non-game wildlife species.					
B	Special Status Species Habitat				X	
Comments:	Within the LPC core area. Lek sites are available within the pasture. There is no habitat disturbance from oil and gas development to date. This site is considered marginal habitat for LPC due to the vegetation type, a mixed shrub-dominated site with no bluestems.					
B	Special Status Species Populations				X	
Comments:	LPC are known to occur in the area. Lek sites have been documented over the years. The pasture is adjacent to other areas supporting active lek sites. The active leks in the pasture exhibit stable counts. This site is not prime nesting habitat but is used for leks.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	5	4
H	Hydrologic	0	0	1	7	3
B	Biotic	0	0	5	5	3

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the

determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	1	9
Hydrologic		0	1	10
Biotic	Biotic indicators show moderate departure but remain sufficient. Continued evaluation to ensure the biotics remain at an acceptable level is recommended. Special status species (LPC) habitat is a concern.	0	5	8

Site Notes: The site is located 1/2 mile from water where the cattle are congregated. Mesquite, sand sage and shinnery oak are the principal shrub species present. The perennial grass cover is reduced, but black grama can still be found in places. The stocking rate in this pasture appears to be sufficient as long as current rotational schemes remain in place.

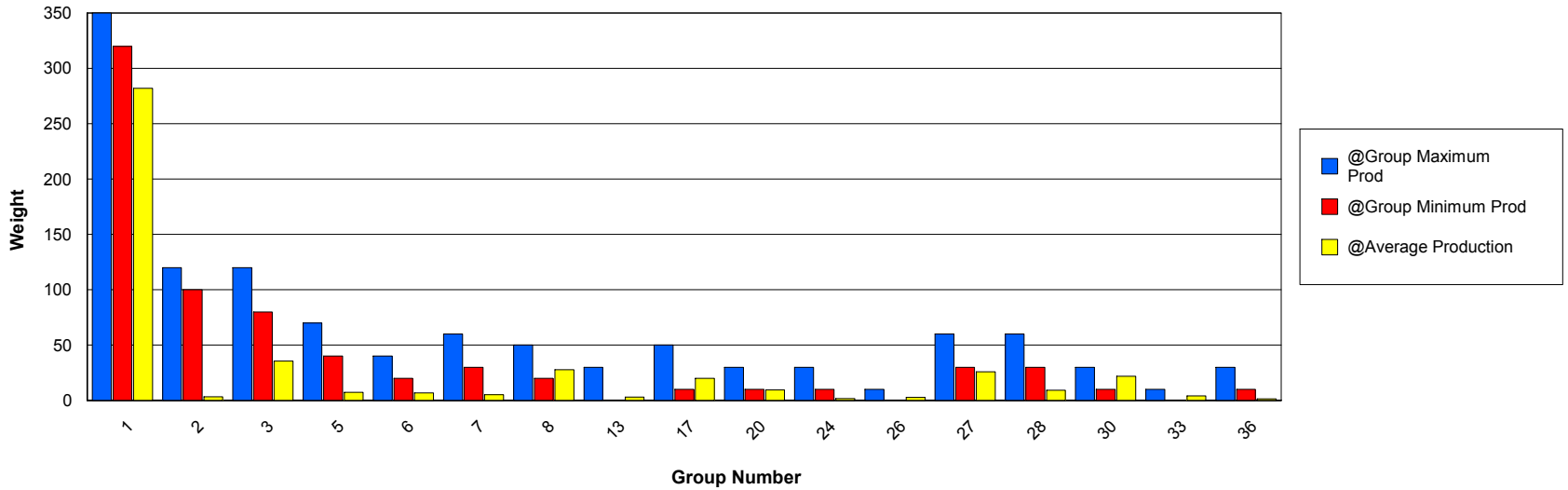
Functional / Structural Groups

Report Parameters

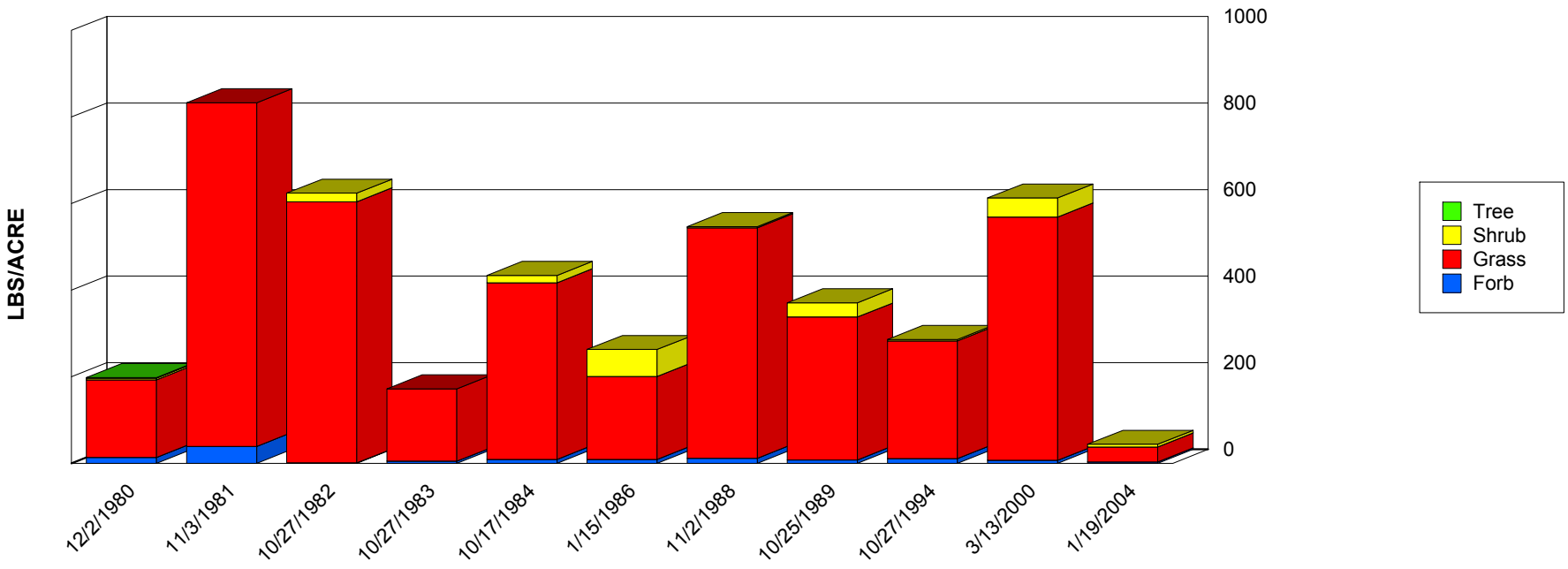
SITE NAME LIKE	65029-ANTELOPE-D072
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY052NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOGR2	320	350	27.20	765.00	282.02	220.39
2	Grass	HIMU2	100	120	1.00	5.34	3.17	2.17
3	Grass	BOER4	80	120	0.00	140.00	35.45	40.06
5	Grass	SPCR	40	70	0.00	23.00	7.45	7.55
6	Grass	MUTO2	20	40	0.00	36.00	6.71	12.03
7	Grass	ARIST	30	60	0.00	17.00	5.14	5.94
8	Grass	PAOB	20	50	1.28	111.00	27.79	36.23
13	Grass	BUDA	0	30	0.00	8.00	3.00	3.56
17	Grass	PAHA	10	50	0.67	53.00	19.93	22.45
20	Grass	MUAR2	10	30	0.00	23.00	9.57	7.84
24	Forb	SPHAE	10	30	1.00	2.00	1.67	0.47
26	Forb	ASTRA	0	10	0.00	10.00	2.75	4.21
27	Forb	AAFF	30	60	0.00	6.00	2.50	2.06
27	Forb	MENTZ	30	60	1.00	6.00	3.50	2.50
27	Forb	XADR	30	60	1.00	39.00	20.00	19.00
28	Forb	CROTO	30	60	1.00	9.00	2.97	2.72
28	Forb	CRPO5	30	60	4.00	4.00	4.00	0.00
28	Forb	PPFF	30	60	0.00	3.00	1.33	1.25
28	Forb	SOEL	30	60	1.00	1.00	1.00	0.00
30	Shrub	GUSA2	10	30	3.00	62.00	21.83	20.10
33	Shrub	OPUNT	0	10	2.00	6.00	4.00	1.63
36	Shrub	SENEC2	10	30	1.00	2.00	1.50	0.50

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

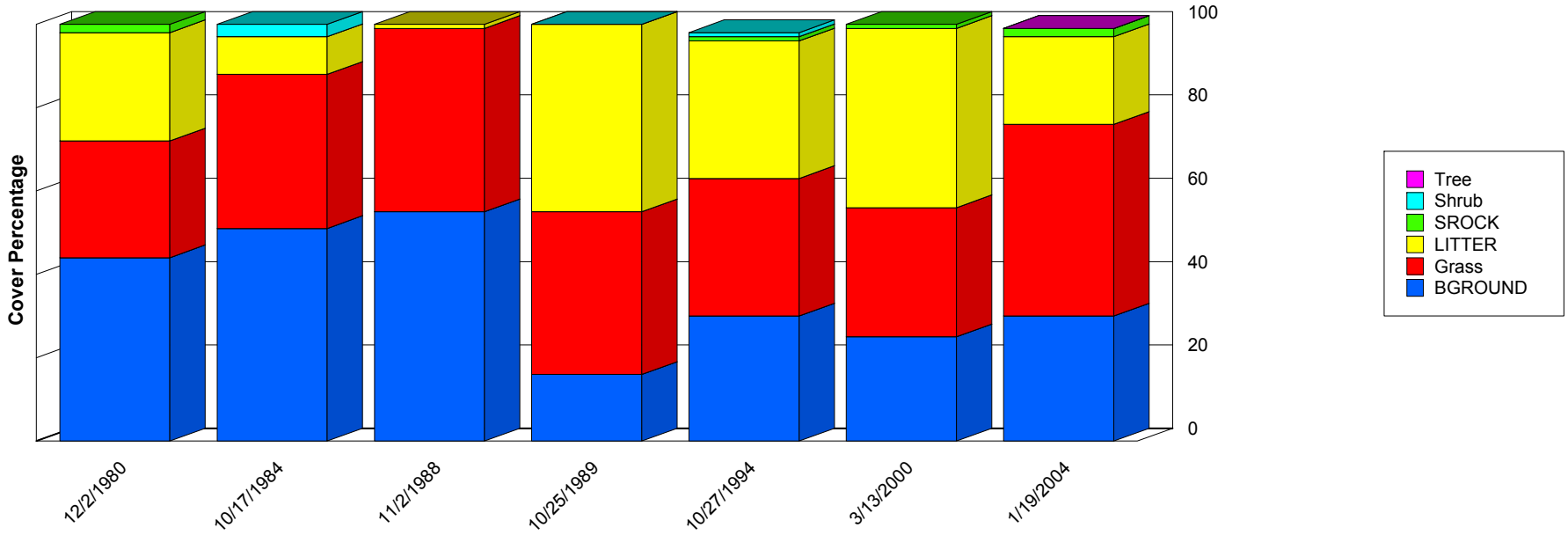


	12/2/1980	11/3/1981	10/27/1982	10/27/1983	10/17/1984	1/15/1986	11/2/1988	10/25/1989	10/27/1994	3/13/2000	1/19/2004
Forb	**14.00**	**39.00**	**1.00**	**5.00**	**9.00**	**9.00**	**12.00**	**8.00**	**11.00**	**7.00**	**3.18**
Grass	**179.00**	**794.00**	**603.00**	**167.00**	**408.00**	**192.00**	**532.00**	**330.00**	**272.00**	**562.00**	**34.49**
Shrub	**4.00**	**0.00**	**20.00**	**0.00**	**17.00**	**62.00**	**3.00**	**33.00**	**3.00**	**44.00**	**6.34**
Tree	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**198.00**	**833.00**	**624.00**	**172.00**	**434.00**	**263.00**	**547.00**	**371.00**	**286.00**	**613.00**	**44.01**

Report Parameters

SITE NAME LIKE	65029-ANTELOPE-D072
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	12/2/1980	10/17/1984	11/2/1988	10/25/1989	10/27/1994	3/13/2000	1/19/2004
BGROUND	44.00	51.00	55.00	16.00	30.00	25.00	30.00
Grass	28.00	37.00	44.00	39.00	33.00	31.00	46.00
LITTER	26.00	9.00	1.00	45.00	33.00	43.00	21.00
Shrub	0.00	3.00	0.00	0.00	1.00	0.00	0.00
SROCK	2.00	0.00	0.00	0.00	1.00	1.00	2.00
Tree	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	98.00	100.00	99.00

Report Parameters

SITE NAME LIKE	65029-ANTELOPE-D072
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

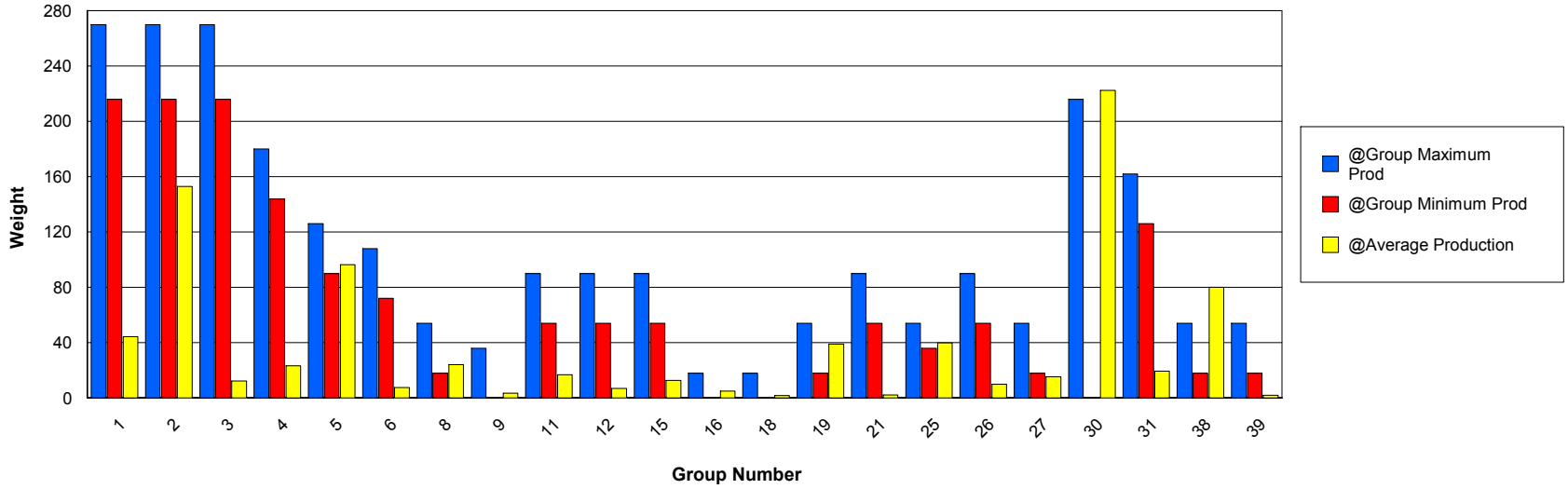
Functional / Structural Groups

Report Parameters

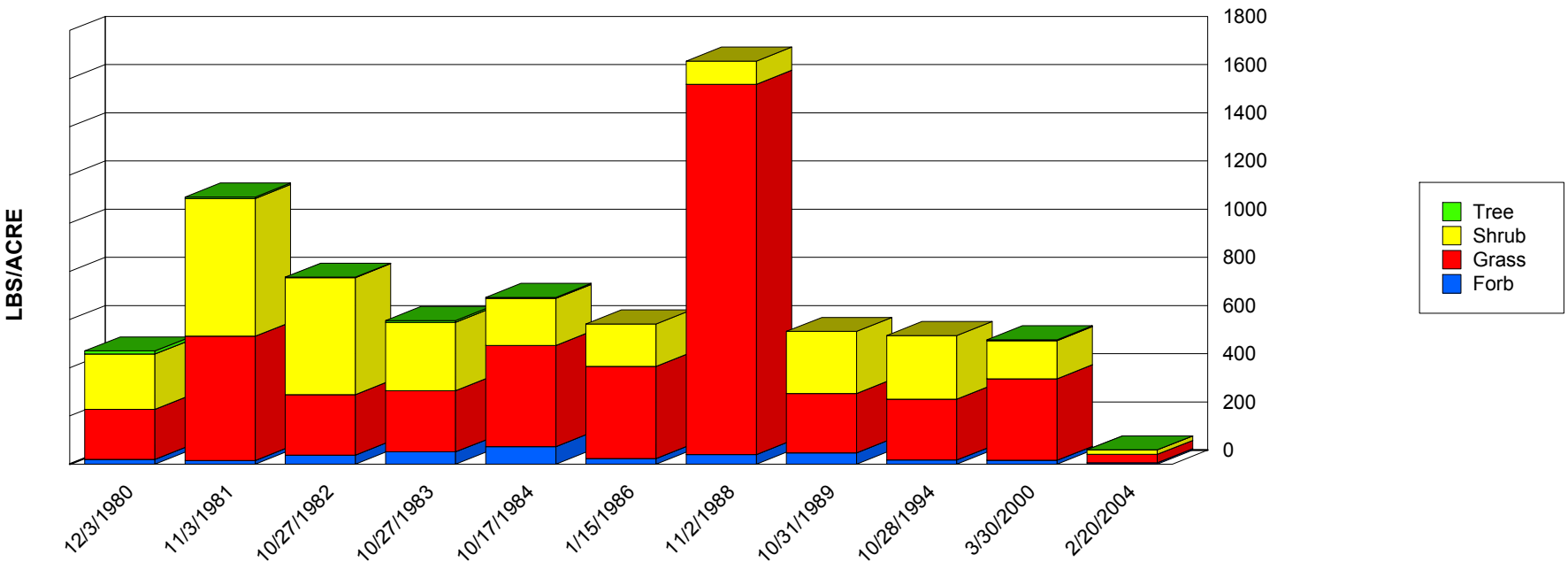
SITE NAME LIKE	65029-APACHE-D069
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY063NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	ANHA	216	270	1.00	200.00	44.33	58.60
2	Grass	ANSC2	216	270	5.94	964.00	152.99	260.56
3	Grass	SPCR	216	270	1.27	22.00	12.30	7.17
4	Grass	BOHI2	144	180	6.00	52.00	23.23	17.73
5	Grass	ARIST	90	126	0.00	170.00	96.36	46.90
6	Grass	PAST6	72	108	0.00	39.00	7.56	11.31
8	Grass	LECO	18	54	6.00	66.00	24.15	18.35
9	Grass	CEPA7	0	36	0.00	7.00	3.50	3.50
11	Grass	BOCU	54	90	1.29	46.00	16.92	13.46
12	Grass	BOER4	54	90	1.12	16.00	7.02	5.23
15	Grass	EROX	54	90	0.00	26.00	12.78	7.93
16	Grass	ERSE2	0	18	1.00	10.00	5.00	3.67
18	Grass	CAREX	0	18	0.00	4.00	1.75	1.48
19	Grass	BOGR2	18	54	1.00	29.00	13.00	11.78
19	Grass	BOSA	18	54	3.00	49.00	20.00	20.61
19	Grass	STCO4	18	54	0.00	10.00	6.00	4.24
21	Forb	ERIOG	54	90	0.00	6.00	2.25	2.49
25	Forb	AMBRO	36	54	14.00	21.00	17.50	3.50
25	Forb	AMPS	36	54	0.86	50.00	22.29	20.55
26	Forb	AAFF	54	90	1.00	36.00	9.86	10.61
27	Forb	MELE2	18	54	5.00	5.00	5.00	0.00
27	Forb	PPFF	18	54	0.57	22.00	10.37	6.99
30	Shrub	QUHA3	0	216	13.20	560.00	222.47	155.25
31	Shrub	ARFI2	126	162	0.55	40.00	19.31	13.56
38	Shrub	YUCCA	18	54	9.00	141.00	75.00	66.00
38	Tree	YUEL	18	54	0.00	13.00	5.00	3.93

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
39	Shrub	OPUNT	18	54	0.00	1.00	0.50	0.50
39	Shrub	PPSS	18	54	0.00	3.00	1.50	1.50



Production Lbs/Acre Trends

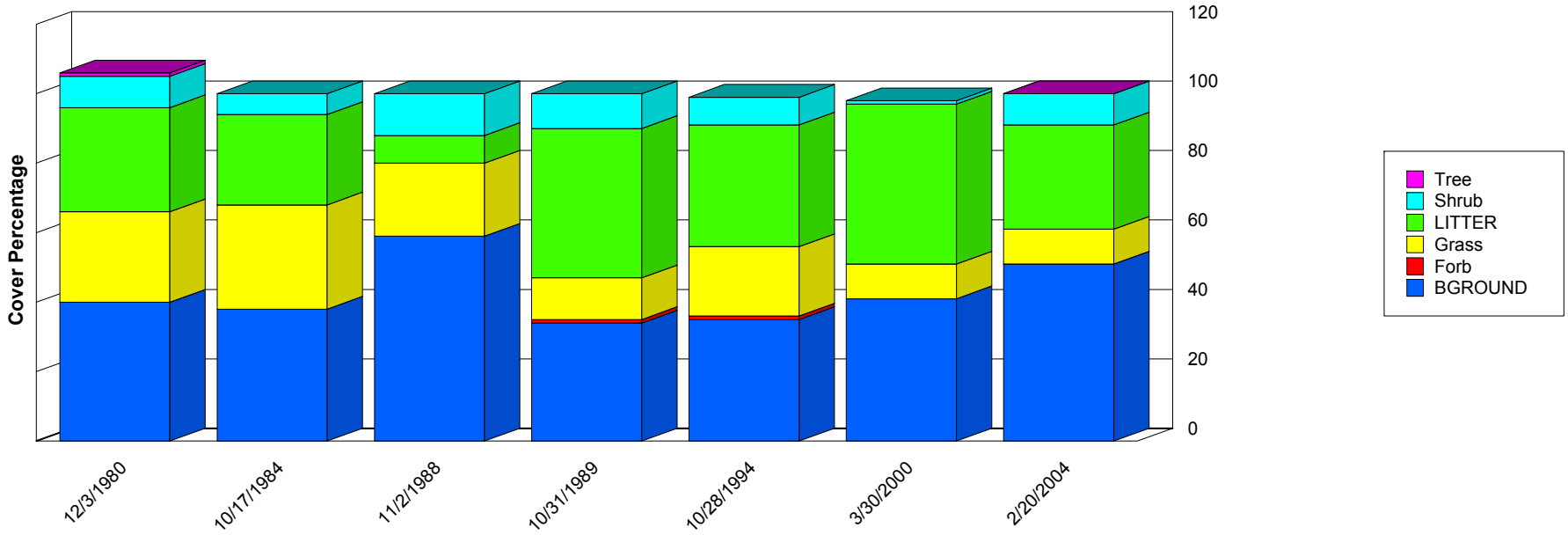


	12/3/1980	11/3/1981	10/27/1982	10/27/1983	10/17/1984	1/15/1986	11/2/1988	10/31/1989	10/28/1994	3/30/2000	2/20/2004
Forb	**20.00**	**15.00**	**38.00**	**51.00**	**73.00**	**24.00**	**40.00**	**47.00**	**17.00**	**16.00**	**5.85**
Grass	**208.00**	**516.00**	**251.00**	**254.00**	**420.00**	**382.00**	**1,537.00**	**246.00**	**253.00**	**338.00**	**34.72**
Shrub	**229.00**	**572.00**	**485.00**	**284.00**	**195.00**	**176.00**	**96.00**	**258.00**	**264.00**	**159.00**	**18.79**
Tree	**13.00**	**6.00**	**2.00**	**7.00**	**4.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.00**	**0.00**
Total	**470.00**	**1,109.00**	**776.00**	**596.00**	**692.00**	**582.00**	**1,673.00**	**551.00**	**534.00**	**516.00**	**59.36**

Report Parameters

SITE NAME LIKE	65029-APACHE-D069
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	12/3/1980	10/17/1984	11/2/1988	10/31/1989	10/28/1994	3/30/2000	2/20/2004
BGROUND	40.00	38.00	59.00	34.00	35.00	41.00	51.00
Forb	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Grass	26.00	30.00	21.00	12.00	20.00	10.00	10.00
LITTER	30.00	26.00	8.00	43.00	35.00	46.00	30.00
Shrub	9.00	6.00	12.00	10.00	8.00	1.00	9.00
Tree	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	106.00	100.00	100.00	100.00	99.00	98.00	100.00

Report Parameters

SITE NAME LIKE	65029-APACHE-D069
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

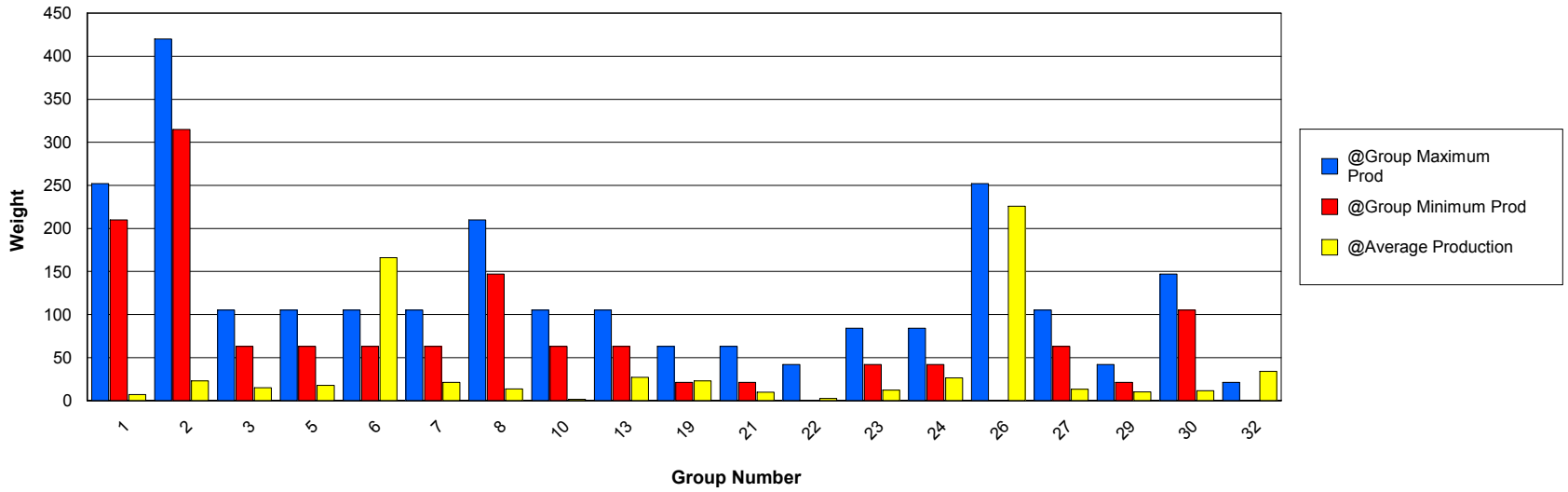
Functional / Structural Groups

Report Parameters

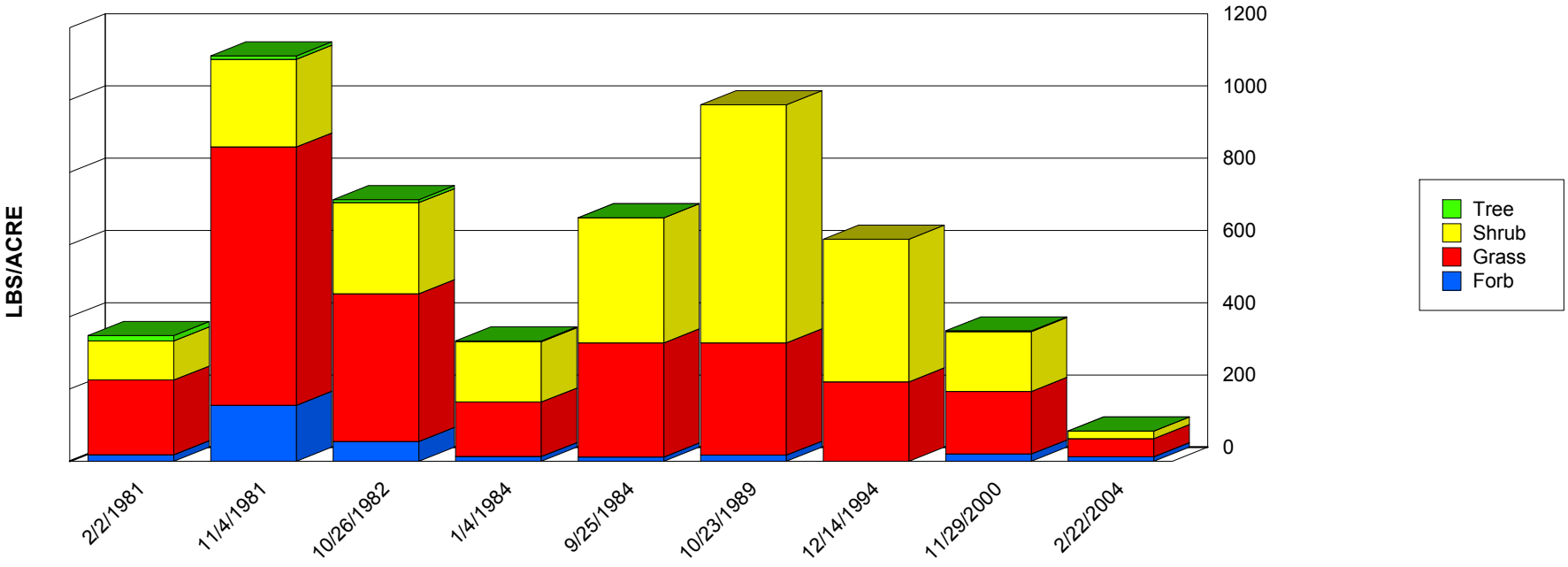
SITE NAME LIKE	65029-EAST #1 (NO)-D073
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY055NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	ANHA	210	252	0.00	27.00	7.07	9.20
2	Grass	ANSC2	315	420	2.00	59.00	22.81	16.88
3	Grass	EROX	63	105	0.00	25.00	13.33	7.94
3	Grass	PAST6	63	105	0.00	8.00	1.56	2.45
5	Grass	BOHI2	63	105	3.00	42.00	17.56	12.71
6	Grass	ARIST	63	105	0.00	451.00	135.44	135.79
6	Grass	ARLO3	63	105	0.00	61.00	30.50	30.50
7	Grass	LECO	63	105	5.00	56.00	21.33	19.88
8	Grass	SPCR	147	210	0.00	49.00	13.67	13.25
10	Grass	BOER4	63	105	1.00	1.68	1.34	0.34
13	Grass	BOCU	63	105	5.00	62.00	26.97	19.73
16	Grass	CAREX	0	21	0.00	1.00	0.40	0.49
19	Grass	AGSM	21	63	0.00	4.00	2.00	2.00
19	Grass	BUDA	21	63	0.00	6.00	1.00	2.24
19	Grass	ERSE2	21	63	0.00	13.00	3.63	4.39
19	Grass	PAHA	21	63	0.00	4.00	2.00	2.00
19	Grass	SPFL2	21	63	0.00	86.00	14.33	32.05
21	Forb	ERAN4	21	63	0.00	56.00	9.33	20.87
21	Forb	ERIOG	21	63	0.00	1.00	0.33	0.47
22	Forb	AMBRO	0	42	0.00	4.00	0.80	1.60
22	Forb	AMPS	0	42	0.00	5.00	1.57	2.01
23	Forb	AAFF	42	84	0.00	26.00	6.75	8.55
23	Forb	XADR	42	84	0.00	32.00	5.33	11.93
24	Forb	CRJA2	42	84	0.00	14.00	3.67	5.26
24	Forb	HYSC	42	84	0.00	6.00	3.00	3.00
24	Forb	LEMO2	42	84	0.00	6.00	1.00	2.24

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
24	Forb	LESQU	42	84	0.00	4.00	1.00	1.73
24	Forb	MELE2	42	84	0.00	35.00	6.00	12.97
24	Forb	PPFF	42	84	0.00	12.00	2.63	4.09
24	Forb	SENEC	42	84	0.00	44.00	8.80	17.60
24	Forb	SOEL	42	84	0.00	1.00	0.33	0.47
26	Shrub	QUHA3	0	252	15.84	593.00	225.76	159.97
27	Shrub	YUCCA	63	105	0.00	40.00	8.00	15.08
27	Tree	YUEL	63	105	0.00	15.00	5.14	5.25
29	Shrub	GUSA2	21	42	0.00	34.00	10.09	11.63
30	Shrub	ARFI2	105	147	0.00	43.00	11.64	15.64
32	Shrub	OPUNT	0	21	0.00	68.00	34.00	34.00



Production Lbs/Acre Trends

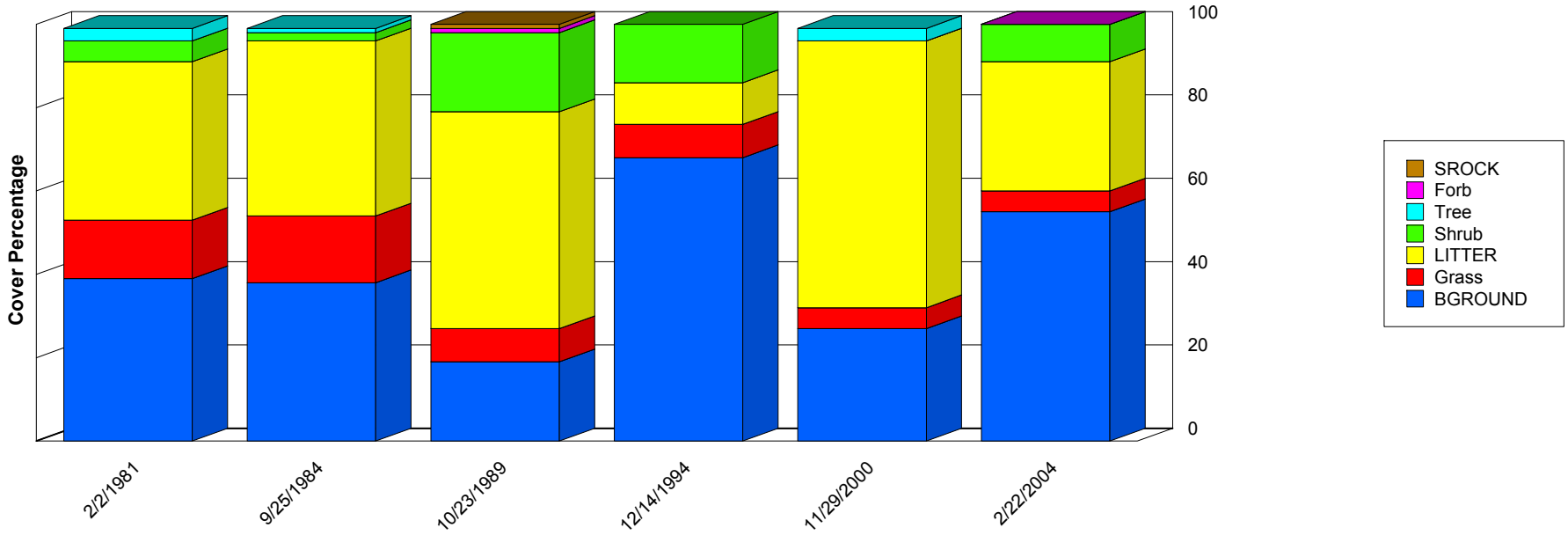


	2/2/1981	11/4/1981	10/26/1982	1/4/1984	9/25/1984	10/23/1989	12/14/1994	11/29/2000	2/22/2004
Forb	**18.00**	**155.00**	**55.00**	**13.00**	**12.00**	**17.00**	**0.00**	**20.00**	**12.32**
Grass	**207.00**	**715.00**	**409.00**	**151.00**	**316.00**	**311.00**	**220.00**	**173.00**	**50.30**
Shrub	**108.00**	**243.00**	**252.00**	**167.00**	**346.00**	**659.00**	**395.00**	**166.00**	**21.10**
Tree	**15.00**	**9.00**	**8.00**	**2.00**	**0.00**	**0.00**	**0.00**	**2.00**	**0.00**
Total	**348.00**	**1,122.00**	**724.00**	**333.00**	**674.00**	**987.00**	**615.00**	**361.00**	**83.72**

Report Parameters

SITE NAME LIKE	65029-EAST #1 (NO)-D073
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	2/2/1981	9/25/1984	10/23/1989	12/14/1994	11/29/2000	2/22/2004
BGROUND	39.00	38.00	19.00	68.00	27.00	55.00
Forb	0.00	0.00	1.00	0.00	0.00	0.00
Grass	14.00	16.00	8.00	8.00	5.00	5.00
LITTER	38.00	42.00	52.00	10.00	64.00	31.00
Shrub	5.00	2.00	19.00	14.00	0.00	9.00
SROCK	0.00	0.00	1.00	0.00	0.00	0.00
Tree	3.00	1.00	0.00	0.00	3.00	0.00

	2/2/1981	9/25/1984	10/23/1989	12/14/1994	11/29/2000	2/22/2004
Total	99.00	99.00	100.00	100.00	99.00	100.00

Report Parameters

SITE NAME LIKE	65029-EAST #1 (NO)-D073
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

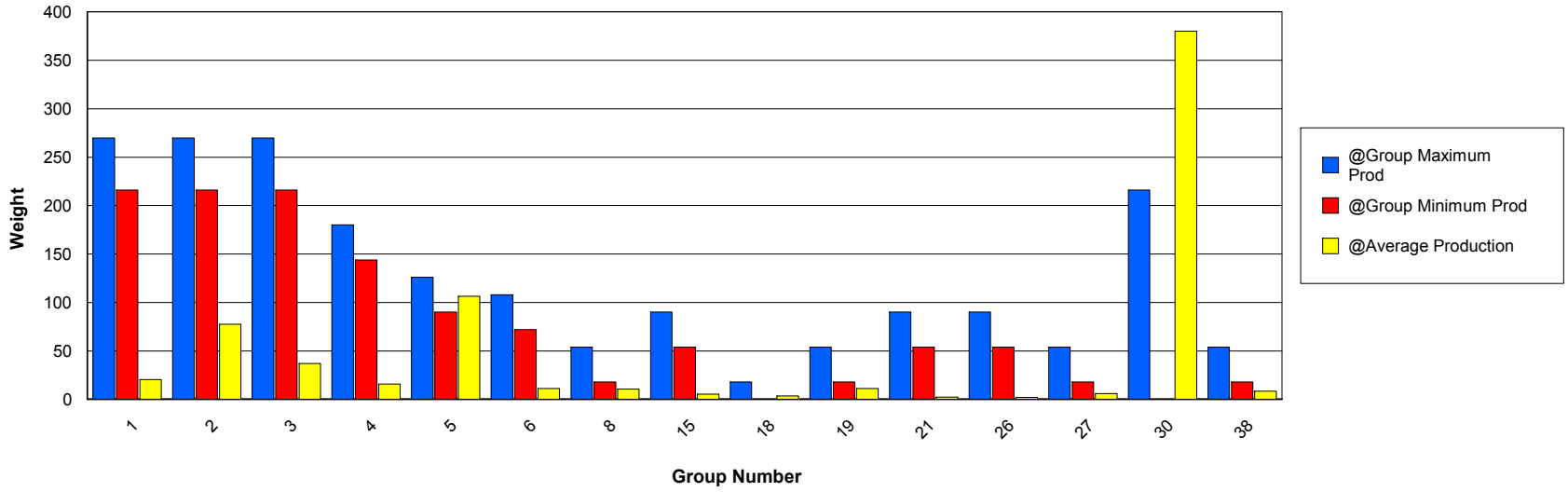
Functional / Structural Groups

Report Parameters

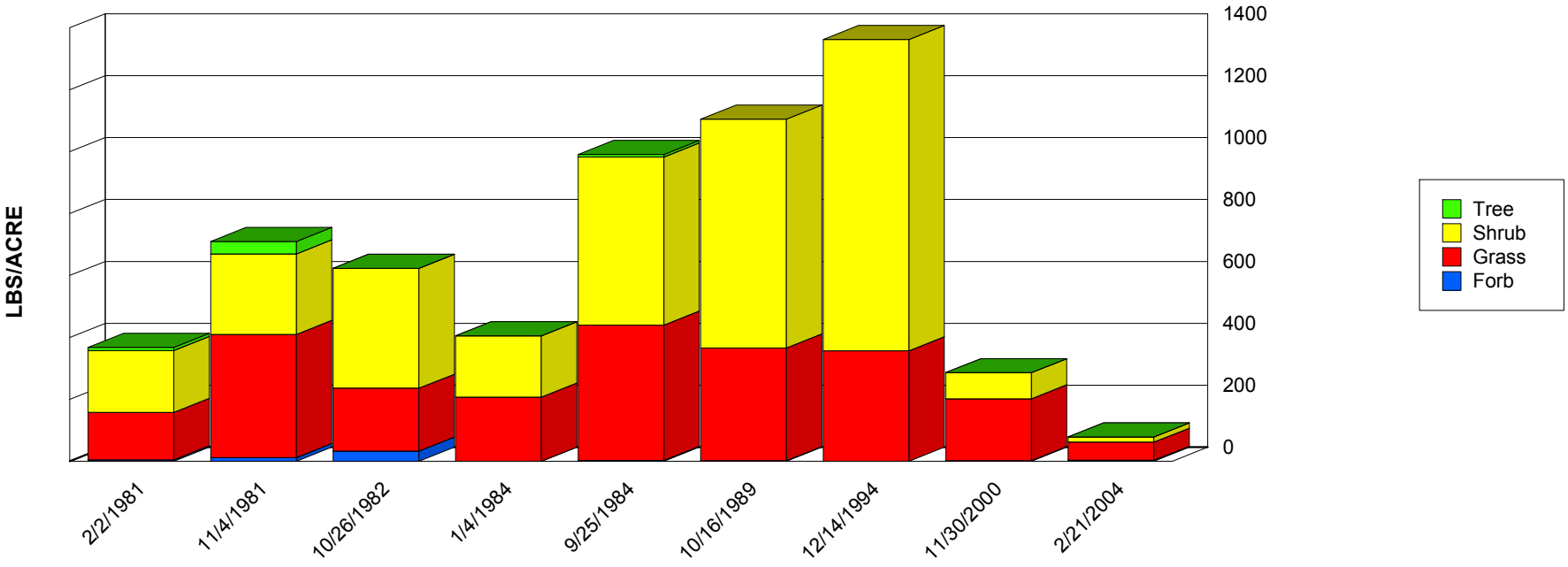
SITE NAME LIKE	65029-EAST #2 (SE)-D074
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY063NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	ANHA	216	270	0.00	60.00	20.44	18.83
2	Grass	ANSC2	216	270	0.00	213.00	77.47	64.48
3	Grass	SPCO4	216	270	0.00	1.00	0.25	0.43
3	Grass	SPCR	216	270	0.00	93.00	16.44	27.69
3	Grass	SPFL2	216	270	0.00	123.00	20.29	42.44
4	Grass	BOHI2	144	180	3.00	64.00	15.87	18.28
5	Grass	ARIST	90	126	0.00	192.00	84.00	59.46
5	Grass	ARLO3	90	126	0.00	45.00	22.50	22.50
6	Grass	PASPA2	72	108	0.00	13.00	4.33	6.13
6	Grass	PAST6	72	108	0.00	30.00	6.88	9.56
8	Grass	LECO	18	54	0.00	36.00	10.41	12.39
15	Grass	EROX	54	90	0.00	13.00	5.21	3.88
18	Grass	CAPR5	0	18	0.00	5.00	2.50	2.50
18	Grass	CAREX	0	18	0.00	3.00	1.00	1.41
19	Grass	AGSM	18	54	0.00	20.00	10.00	10.00
19	Grass	SPGI	18	54	0.00	9.00	1.13	2.98
21	Forb	ERAN4	54	90	0.00	10.00	2.17	3.67
26	Forb	AAFF	54	90	0.00	5.00	1.71	1.58
26	Forb	LATHY	54	90	0.00	1.00	0.33	0.47
27	Forb	HOFFM	18	54	0.00	29.00	5.80	11.60
30	Shrub	QUHA3	0	216	15.18	1,001.00	380.24	306.03
31	Shrub	ARFI2	126	162	0.00	2.00	0.85	0.84
38	Tree	YUEL	18	54	0.00	40.00	8.29	13.54
39	Shrub	OPUNT	18	54	0.00	4.00	0.88	1.54

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

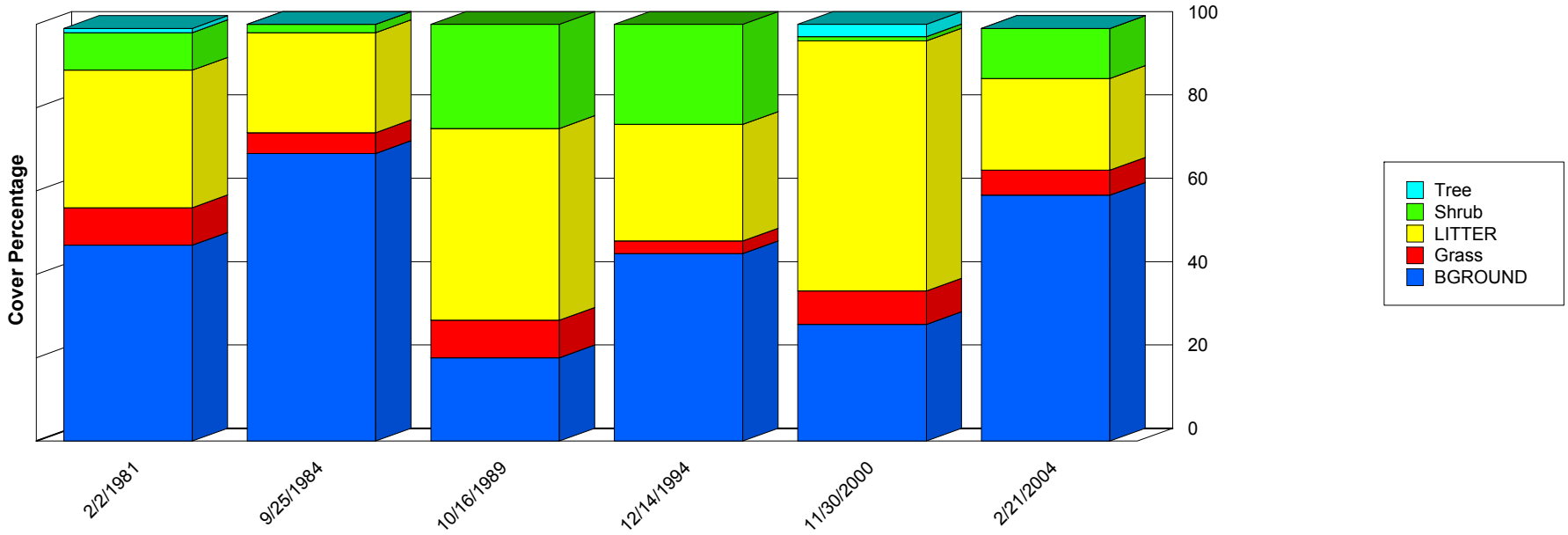


	2/2/1981	11/4/1981	10/26/1982	1/4/1984	9/25/1984	10/16/1989	12/14/1994	11/30/2000	2/21/2004
Forb	**5.00**	**12.00**	**33.00**	**0.00**	**3.00**	**2.00**	**0.00**	**2.00**	**3.23**
Grass	**153.00**	**398.00**	**203.00**	**207.00**	**437.00**	**364.00**	**357.00**	**200.00**	**58.41**
Shrub	**200.00**	**260.00**	**387.00**	**198.00**	**543.00**	**739.00**	**1,005.00**	**84.00**	**17.07**
Tree	**10.00**	**40.00**	**0.00**	**0.00**	**8.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**368.00**	**710.00**	**623.00**	**405.00**	**991.00**	**1,105.00**	**1,362.00**	**286.00**	**78.71**

Report Parameters

SITE NAME LIKE	65029-EAST #2 (SE)-D074
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	2/2/1981	9/25/1984	10/16/1989	12/14/1994	11/30/2000	2/21/2004
BGROUND	47.00	69.00	20.00	45.00	28.00	59.00
Grass	9.00	5.00	9.00	3.00	8.00	6.00
LITTER	33.00	24.00	46.00	28.00	60.00	22.00
Shrub	9.00	2.00	25.00	24.00	1.00	12.00
Tree	1.00	0.00	0.00	0.00	3.00	0.00
Total	99.00	100.00	100.00	100.00	100.00	99.00

Report Parameters

SITE NAME LIKE	65029-EAST #2 (SE)-D074
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

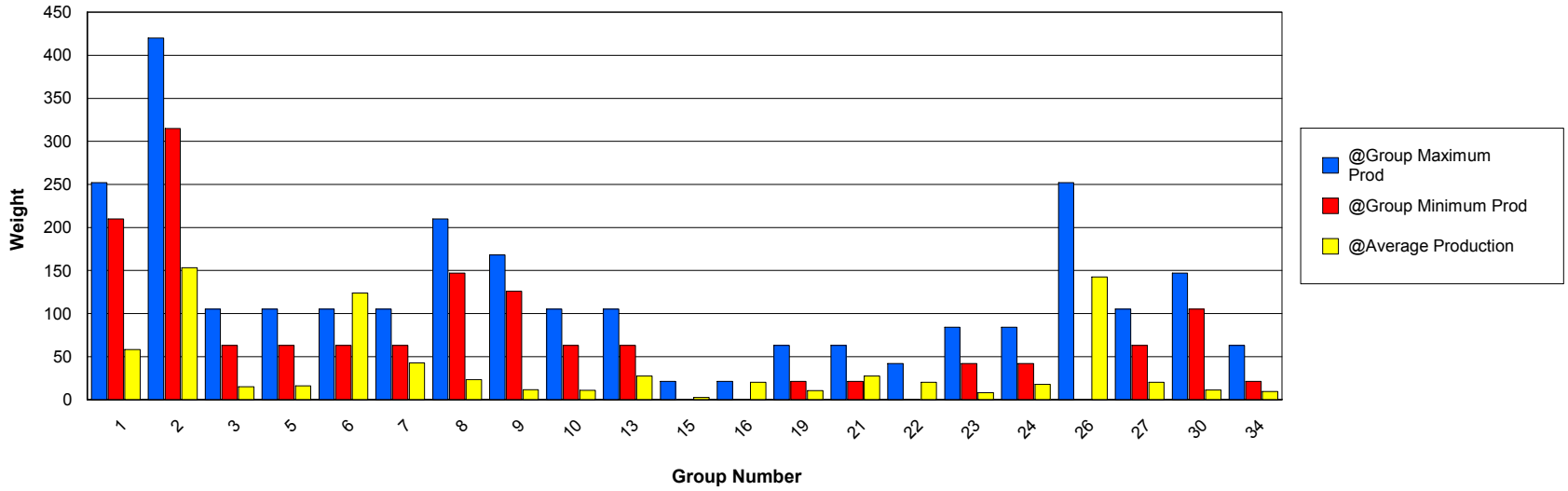
Functional / Structural Groups

Report Parameters

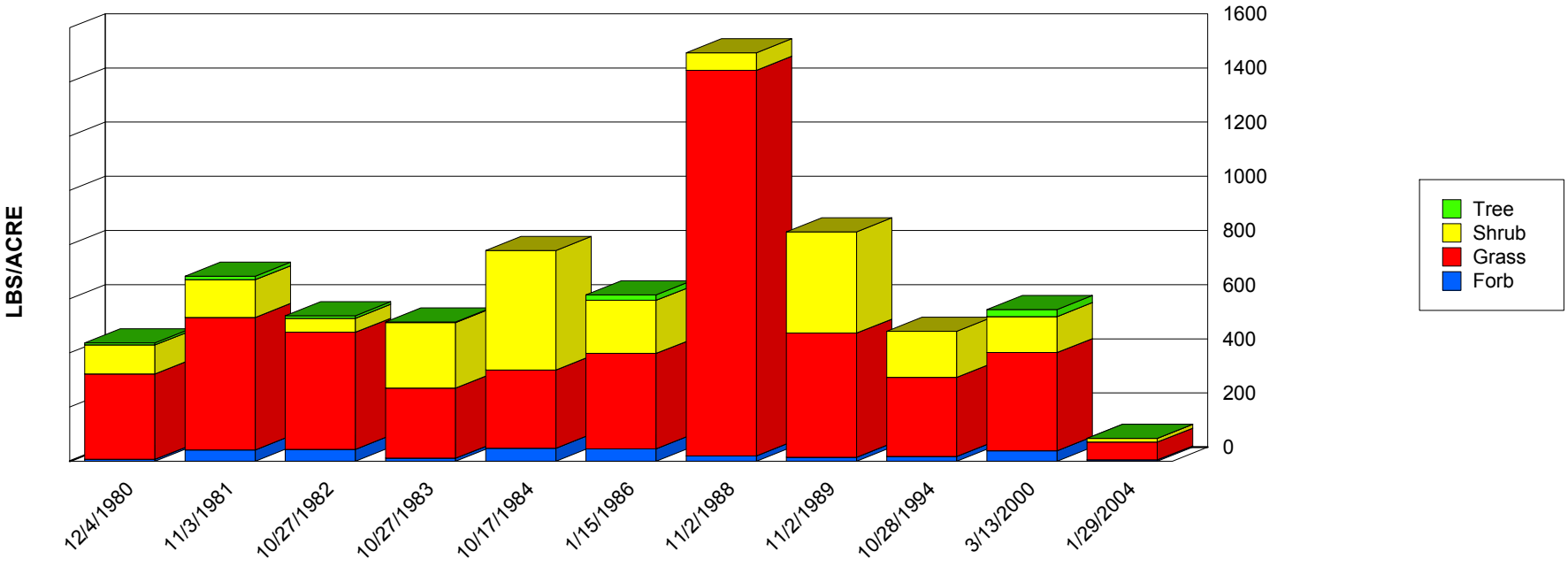
SITE NAME LIKE	65029-FIELDS-D070
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY055NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	ANHA	210	252	0.00	214.00	58.17	74.51
2	Grass	ANSC2	315	420	4.43	941.00	153.27	280.67
3	Grass	EROX	63	105	0.00	25.00	11.56	9.01
3	Grass	PAST6	63	105	0.00	7.00	3.43	2.50
5	Grass	BOHI2	63	105	0.59	42.00	16.14	10.02
6	Grass	ARIST	63	105	0.00	225.00	123.73	59.01
7	Grass	LECO	63	105	8.43	97.00	42.68	29.37
8	Grass	SPCR	147	210	3.00	49.00	23.17	15.33
9	Grass	STCO4	126	168	0.00	28.00	11.50	10.59
10	Grass	BOER4	63	105	1.00	30.00	10.80	10.74
13	Grass	BOCU	63	105	1.84	78.00	27.53	18.87
15	Grass	CEPA7	0	21	0.00	6.00	2.50	1.87
16	Grass	CAREX	0	21	1.00	58.00	20.00	26.87
19	Grass	TRIDE	21	63	6.00	15.00	10.50	4.50
21	Forb	ERAN4	21	63	1.00	35.00	17.00	15.60
21	Forb	ERIOG	21	63	0.00	20.00	9.50	7.12
21	Forb	SPHAE	21	63	1.00	1.00	1.00	0.00
22	Forb	AMBRO	0	42	2.00	38.00	20.00	18.00
23	Forb	AAFF	42	84	0.00	19.00	8.00	5.72
24	Forb	CRJA2	42	84	1.33	5.00	3.17	1.84
24	Forb	MELE2	42	84	1.00	3.00	2.00	1.00
24	Forb	PPFF	42	84	11.00	14.00	12.50	1.50
26	Shrub	QUHA3	0	252	14.26	345.00	142.57	88.33
27	Shrub	YUCCA	63	105	0.00	20.00	9.00	7.90
27	Tree	YUEL	63	105	0.00	26.00	11.14	8.66
30	Shrub	ARFI2	105	147	0.00	33.00	11.00	11.37

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
34	Shrub	SENEC2	21	63	2.00	18.00	9.50	5.85



Production Lbs/Acre Trends

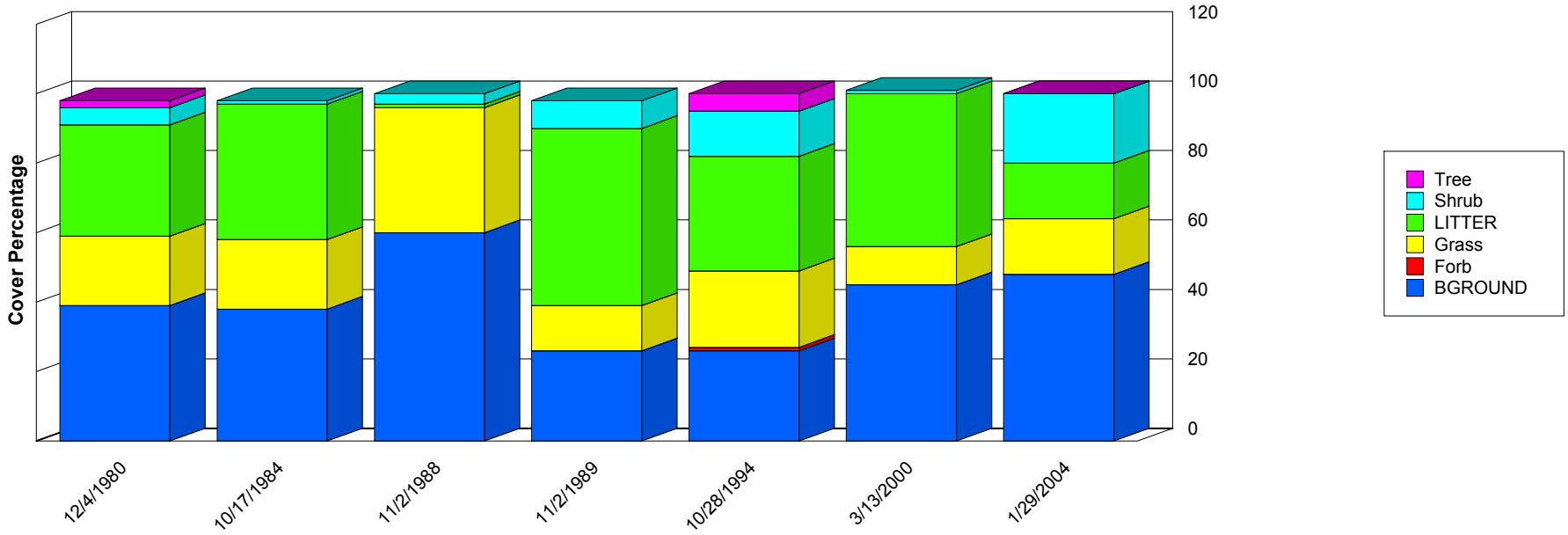


	12/4/1980	11/3/1981	10/27/1982	10/27/1983	10/17/1984	1/15/1986	11/2/1988	11/2/1989	10/28/1994	3/13/2000	1/29/2004
Forb	**7.00**	**42.00**	**44.00**	**11.00**	**48.00**	**46.00**	**20.00**	**15.00**	**18.00**	**39.00**	**4.77**
Grass	**315.00**	**489.00**	**432.00**	**259.00**	**289.00**	**352.00**	**1,423.00**	**458.00**	**292.00**	**362.00**	**65.74**
Shrub	**107.00**	**139.00**	**52.00**	**242.00**	**441.00**	**196.00**	**65.00**	**374.00**	**170.00**	**133.00**	**14.26**
Tree	**8.00**	**13.00**	**9.00**	**2.00**	**0.00**	**20.00**	**0.00**	**0.00**	**0.00**	**26.00**	**0.00**
Total	**437.00**	**683.00**	**537.00**	**514.00**	**778.00**	**614.00**	**1,508.00**	**847.00**	**480.00**	**560.00**	**84.77**

Report Parameters

SITE NAME LIKE	65029-FIELDS-D070
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	12/4/1980	10/17/1984	11/2/1988	11/2/1989	10/28/1994	3/13/2000	1/29/2004
BGROUND	39.00	38.00	60.00	26.00	26.00	45.00	48.00
Forb	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Grass	20.00	20.00	36.00	13.00	22.00	11.00	16.00
LITTER	32.00	39.00	1.00	51.00	33.00	44.00	16.00
Shrub	5.00	1.00	3.00	8.00	13.00	1.00	20.00
Tree	2.00	0.00	0.00	0.00	5.00	0.00	0.00
Total	98.00	98.00	100.00	98.00	100.00	101.00	100.00

Report Parameters

SITE NAME LIKE	65029-FIELDS-D070
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

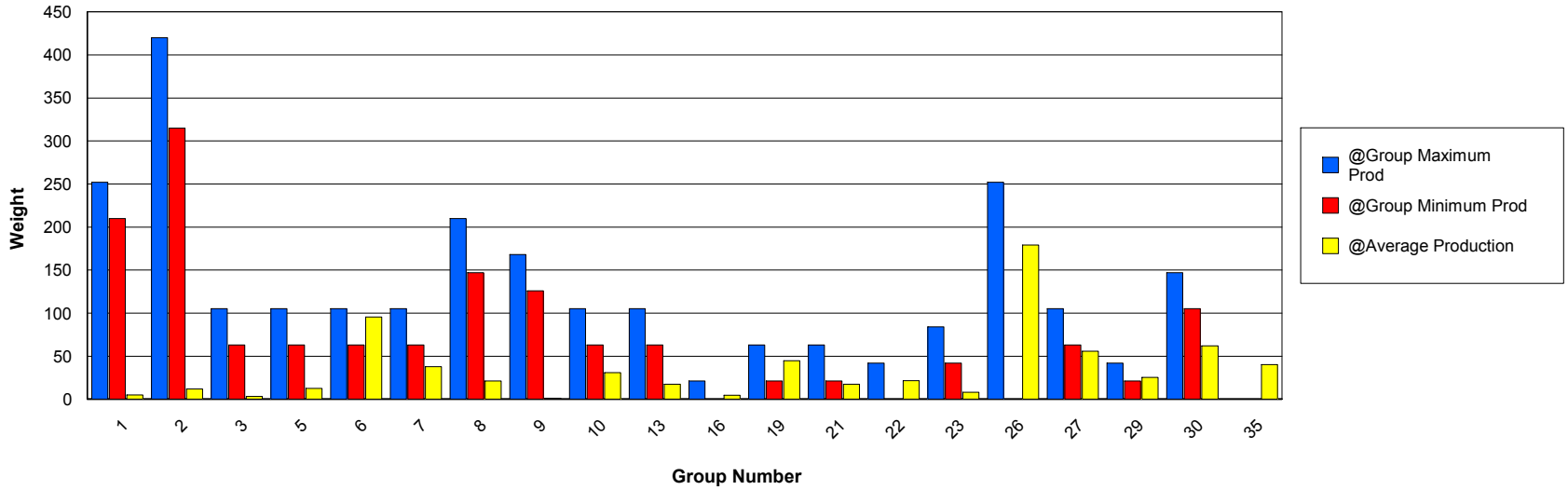
Functional / Structural Groups

Report Parameters

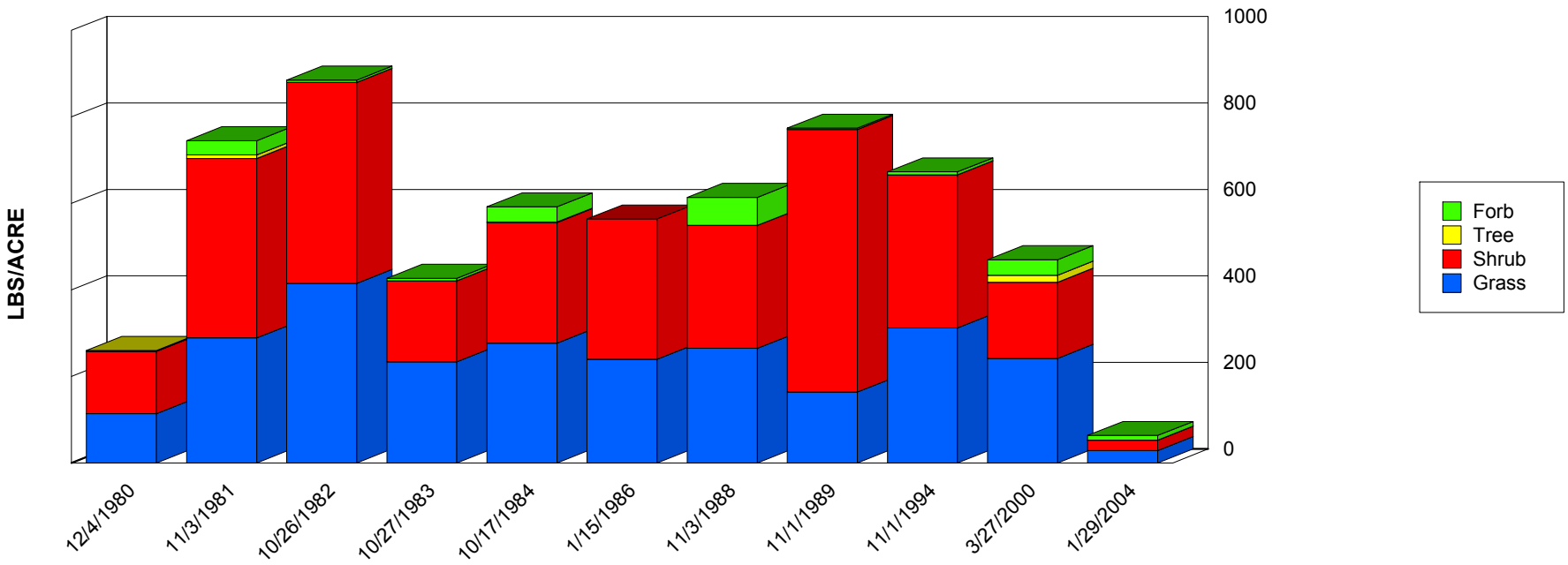
SITE NAME LIKE	65029-SAGE-D068
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY055NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	ANHA	210	252	0.00	15.00	5.00	5.96
2	Grass	ANSC2	315	420	0.00	20.00	11.83	7.08
3	Grass	EROX	63	105	0.00	5.00	2.17	1.77
3	Grass	PAST6	63	105	1.00	1.33	1.17	0.17
5	Grass	BOHI2	63	105	0.59	30.00	12.60	8.30
6	Grass	ARIST	63	105	0.00	179.00	95.45	51.34
7	Grass	LECO	63	105	5.00	94.00	37.80	29.27
8	Grass	SPCR	147	210	0.00	55.00	21.00	16.90
9	Grass	STCO4	126	168	0.00	2.00	1.00	1.00
10	Grass	BOER4	63	105	0.00	190.00	31.00	60.34
13	Grass	BOCU	63	105	1.90	46.00	17.26	13.43
16	Grass	CAREX	0	21	1.00	12.00	4.67	5.19
18	Grass	MUPO2	0	42	0.00	1.00	0.50	0.50
19	Grass	BOGR2	21	63	0.66	49.00	11.94	16.97
19	Grass	LYPH	21	63	0.00	3.00	1.33	1.25
19	Grass	SPFL2	21	63	7.00	56.00	31.50	24.50
21	Forb	ERAN4	21	63	2.00	33.00	17.50	15.50
22	Forb	AMBRO	0	42	0.00	65.00	21.67	30.64
23	Forb	AAFF	42	84	0.00	36.00	8.17	12.64
26	Shrub	QUHA3	0	252	14.88	477.00	178.99	113.76
27	Shrub	YUCCA	63	105	7.00	88.00	47.50	40.50
27	Tree	YUEL	63	105	0.00	16.00	5.40	5.99
27	Shrub	YUGL	63	105	0.00	9.00	3.00	4.24
29	Shrub	GUSA2	21	42	0.00	99.00	25.25	42.58
30	Shrub	ARFI2	105	147	0.00	222.00	62.00	60.41
35	Shrub	PRGL2	0	0	7.00	131.00	40.33	37.71

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

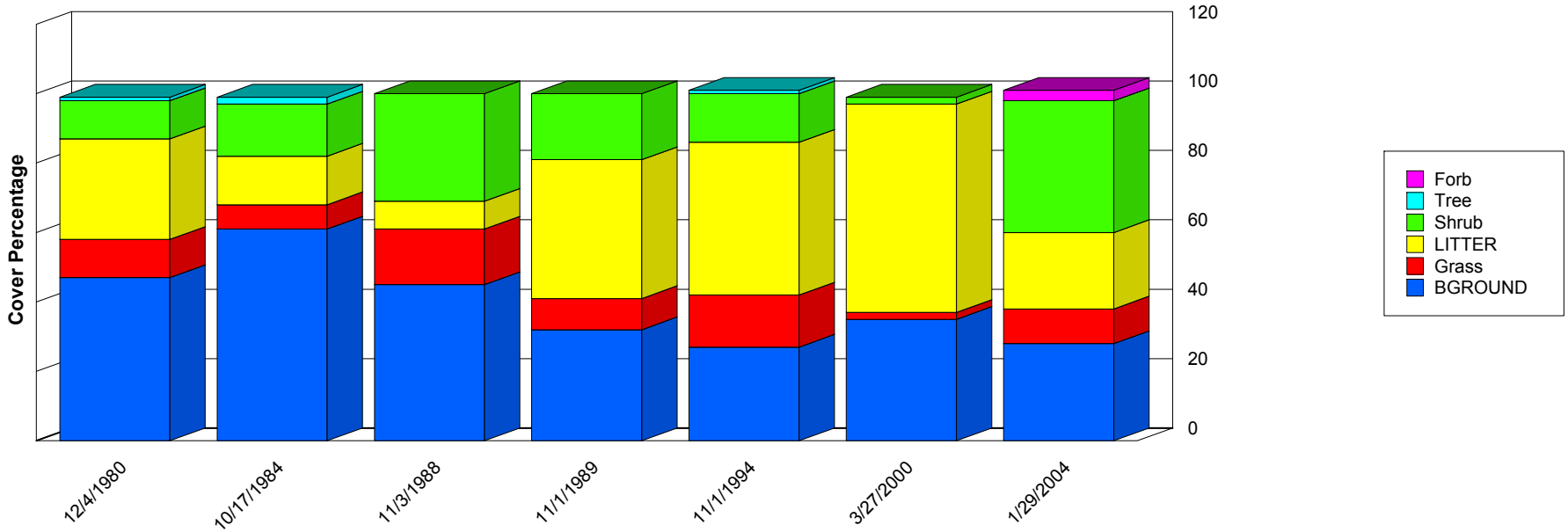


	12/4/1980	11/3/1981	10/26/1982	10/27/1983	10/17/1984	1/15/1986	11/3/1988	11/1/1989	11/1/1994	3/27/2000	1/29/2004
Forb	**0.00**	**33.00**	**5.00**	**6.00**	**35.00**	**0.00**	**65.00**	**3.00**	**7.00**	**36.00**	**10.74**
Grass	**114.00**	**289.00**	**415.00**	**234.00**	**277.00**	**240.00**	**265.00**	**164.00**	**312.00**	**242.00**	**28.58**
Shrub	**144.00**	**415.00**	**465.00**	**187.00**	**279.00**	**324.00**	**284.00**	**607.00**	**354.00**	**176.00**	**24.21**
Tree	**2.00**	**8.00**	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.00**	**0.00**
Total	**260.00**	**745.00**	**885.00**	**427.00**	**592.00**	**564.00**	**614.00**	**774.00**	**673.00**	**470.00**	**63.53**

Report Parameters

SITE NAME LIKE	65029-SAGE-D068
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	12/4/1980	10/17/1984	11/3/1988	11/1/1989	11/1/1994	3/27/2000	1/29/2004
BGROUND	47.00	61.00	45.00	32.00	27.00	35.00	28.00
Forb	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Grass	11.00	7.00	16.00	9.00	15.00	2.00	10.00
LITTER	29.00	14.00	8.00	40.00	44.00	60.00	22.00
Shrub	11.00	15.00	31.00	19.00	14.00	2.00	38.00
Tree	1.00	2.00	0.00	0.00	1.00	0.00	0.00
Total	99.00	99.00	100.00	100.00	101.00	99.00	101.00

Report Parameters

SITE NAME LIKE	65029-SAGE-D068
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

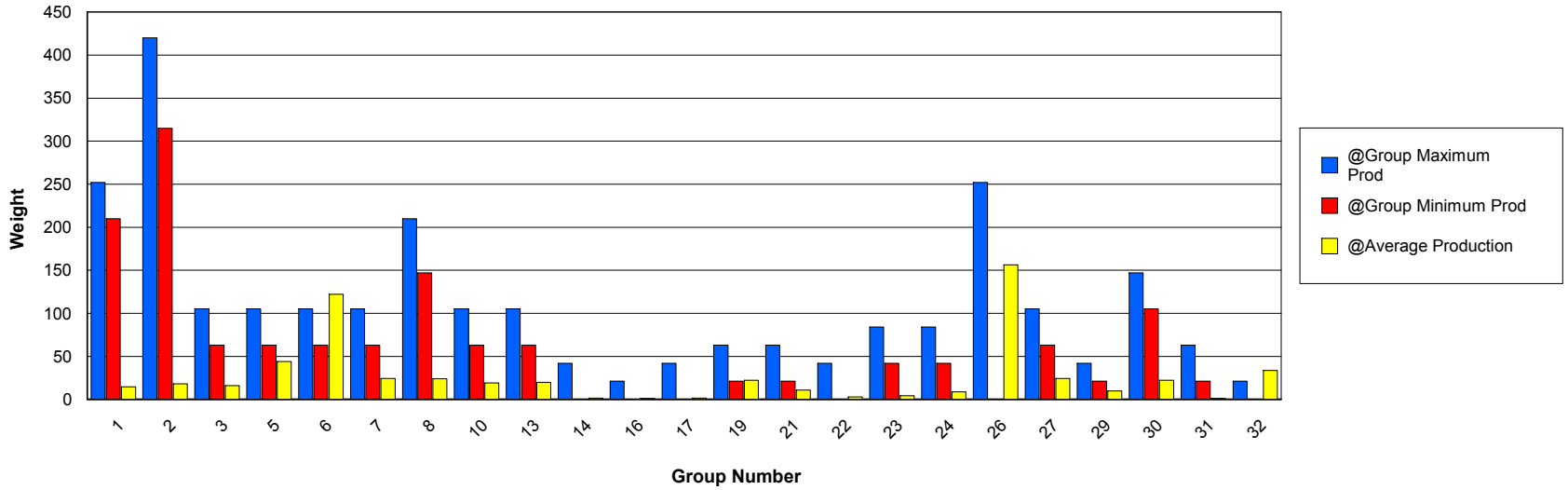
Functional / Structural Groups

Report Parameters

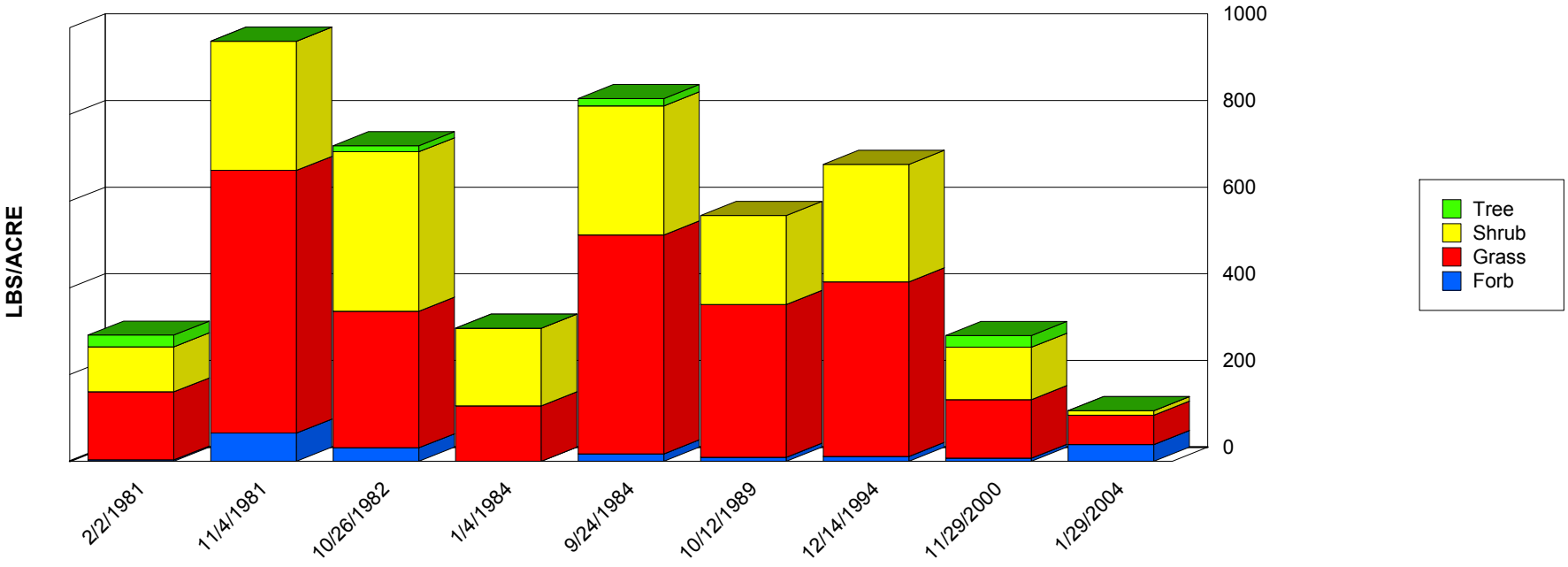
SITE NAME LIKE	65029-SOUTH #3-D075
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY055NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	ANHA	210	252	0.00	72.00	14.67	24.86
2	Grass	ANSC2	315	420	0.00	68.00	13.59	21.08
2	Grass	BOSA	315	420	0.00	13.00	4.33	6.13
3	Grass	EROX	63	105	0.00	46.00	13.63	15.47
3	Grass	PAST6	63	105	0.00	8.00	2.25	3.07
5	Grass	BOHI2	63	105	7.04	88.00	43.89	27.48
6	Grass	ARIST	63	105	0.00	278.00	97.44	81.70
6	Grass	ARLO3	63	105	0.00	49.00	24.50	24.50
7	Grass	LECO	63	105	0.00	69.00	24.34	22.80
8	Grass	SPCR	147	210	0.00	65.00	23.89	19.58
10	Grass	BOER4	63	105	0.00	56.00	19.16	22.07
13	Grass	BOCU	63	105	2.00	44.00	19.89	13.32
14	Grass	MUSQ	0	42	0.00	3.00	1.33	1.25
16	Grass	CAREX	0	21	0.00	6.00	1.00	1.94
17	Grass	MUAR2	0	42	0.00	4.00	1.33	1.89
19	Grass	AGSM	21	63	0.00	4.00	2.00	2.00
19	Grass	BOGR2	21	63	0.00	21.00	4.85	7.02
19	Grass	BUDA	21	63	0.00	2.00	0.33	0.75
19	Grass	ERSE2	21	63	0.00	25.00	7.00	9.09
19	Grass	LYPH	21	63	0.00	5.00	1.00	2.00
19	Grass	PAHA	21	63	0.00	0.00	0.00	0.00
19	Grass	SCPA	21	63	0.00	26.00	3.25	8.60
19	Grass	SPFL2	21	63	0.00	23.00	3.83	8.57
21	Forb	ERAN4	21	63	0.00	49.00	8.50	18.13
21	Forb	ERIOG	21	63	0.00	7.00	2.33	3.30
22	Forb	AMBRO	0	42	0.00	4.00	1.33	1.89

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
22	Forb	AMPS	0	42	0.00	3.00	1.50	1.50
23	Forb	AAFF	42	84	0.00	16.00	4.22	5.43
23	Forb	HEDEO	42	84	0.00	0.00	0.00	0.00
24	Forb	CRJA2	42	84	1.87	4.00	2.94	1.07
24	Forb	LESQU	42	84	0.00	3.00	0.60	1.20
24	Forb	SENEC	42	84	0.00	26.00	5.20	10.40
26	Shrub	QUHA3	0	252	9.92	280.00	156.21	94.01
27	Shrub	YUCCA	63	105	0.00	100.00	12.00	31.21
27	Tree	YUEL	63	105	0.00	27.00	12.14	11.41
29	Shrub	GUSA2	21	42	0.00	53.00	9.94	18.04
30	Shrub	ARFI2	105	147	0.00	43.00	22.11	15.67
31	Shrub	CHRYS9	21	63	0.00	5.00	1.00	2.00
32	Shrub	OPUNT	0	21	0.00	67.00	33.50	33.50



Production Lbs/Acre Trends

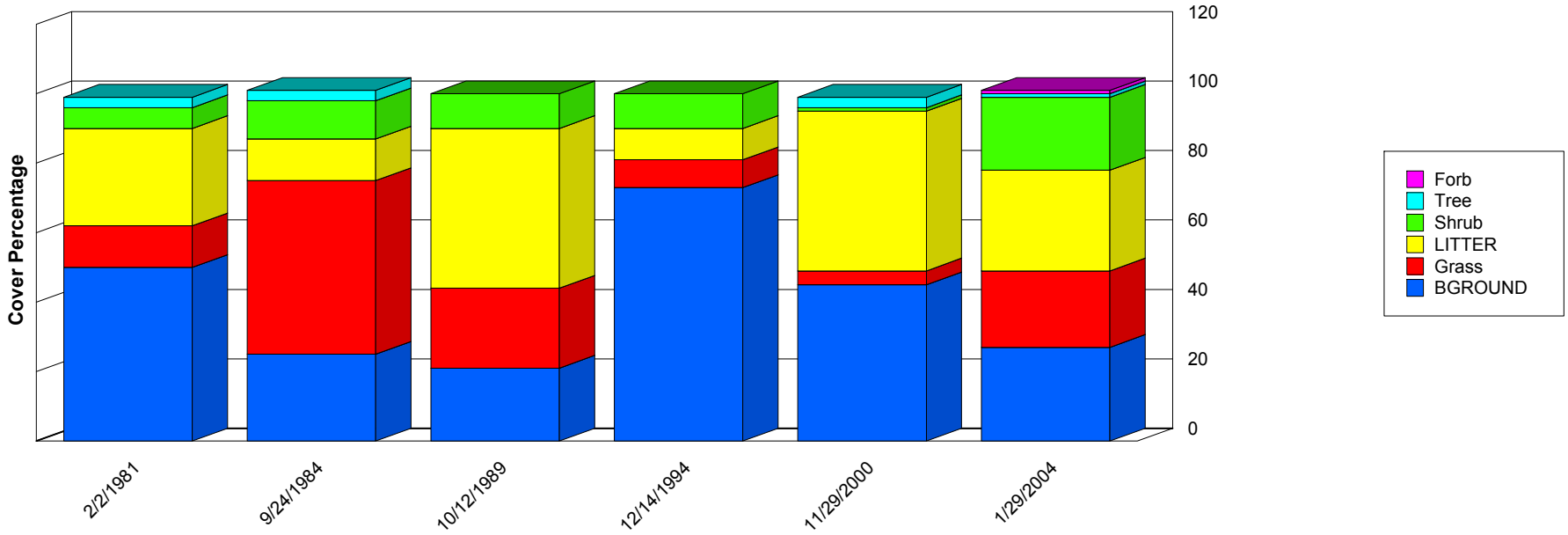


	2/2/1981	11/4/1981	10/26/1982	1/4/1984	9/24/1984	10/12/1989	12/14/1994	11/29/2000	1/29/2004
Forb	**3.00**	**65.00**	**31.00**	**0.00**	**17.00**	**9.00**	**11.00**	**7.00**	**38.49**
Grass	**157.00**	**606.00**	**315.00**	**128.00**	**505.00**	**353.00**	**403.00**	**135.00**	**67.94**
Shrub	**104.00**	**298.00**	**368.00**	**179.00**	**298.00**	**205.00**	**271.00**	**121.00**	**10.49**
Tree	**27.00**	**0.00**	**14.00**	**0.00**	**17.00**	**0.00**	**0.00**	**27.00**	**0.00**
Total	**291.00**	**969.00**	**728.00**	**307.00**	**837.00**	**567.00**	**685.00**	**290.00**	**116.92**

Report Parameters

SITE NAME LIKE	65029-SOUTH #3-D075
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	2/2/1981	9/24/1984	10/12/1989	12/14/1994	11/29/2000	1/29/2004
BGROUND	50.00	25.00	21.00	73.00	45.00	27.00
Forb	0.00	0.00	0.00	0.00	0.00	1.00
Grass	12.00	50.00	23.00	8.00	4.00	22.00
LITTER	28.00	12.00	46.00	9.00	46.00	29.00
Shrub	6.00	11.00	10.00	10.00	1.00	21.00
Tree	3.00	3.00	0.00	0.00	3.00	1.00
Total	99.00	101.00	100.00	100.00	99.00	101.00

Report Parameters

SITE NAME LIKE	65029-SOUTH #3-D075
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

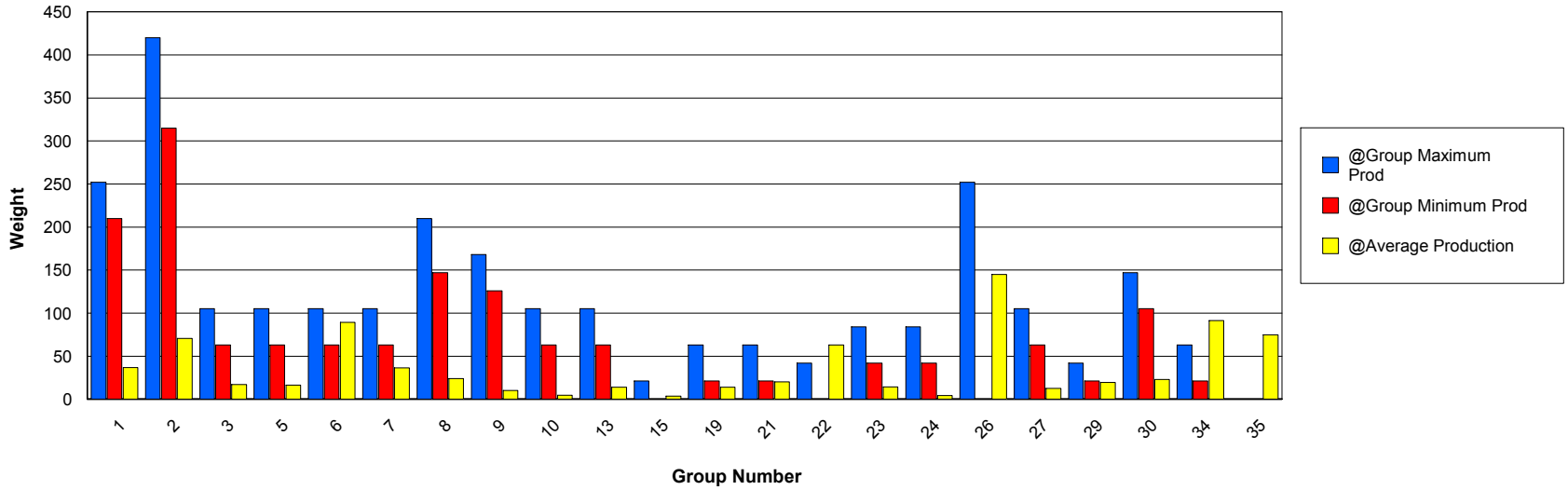
Functional / Structural Groups

Report Parameters

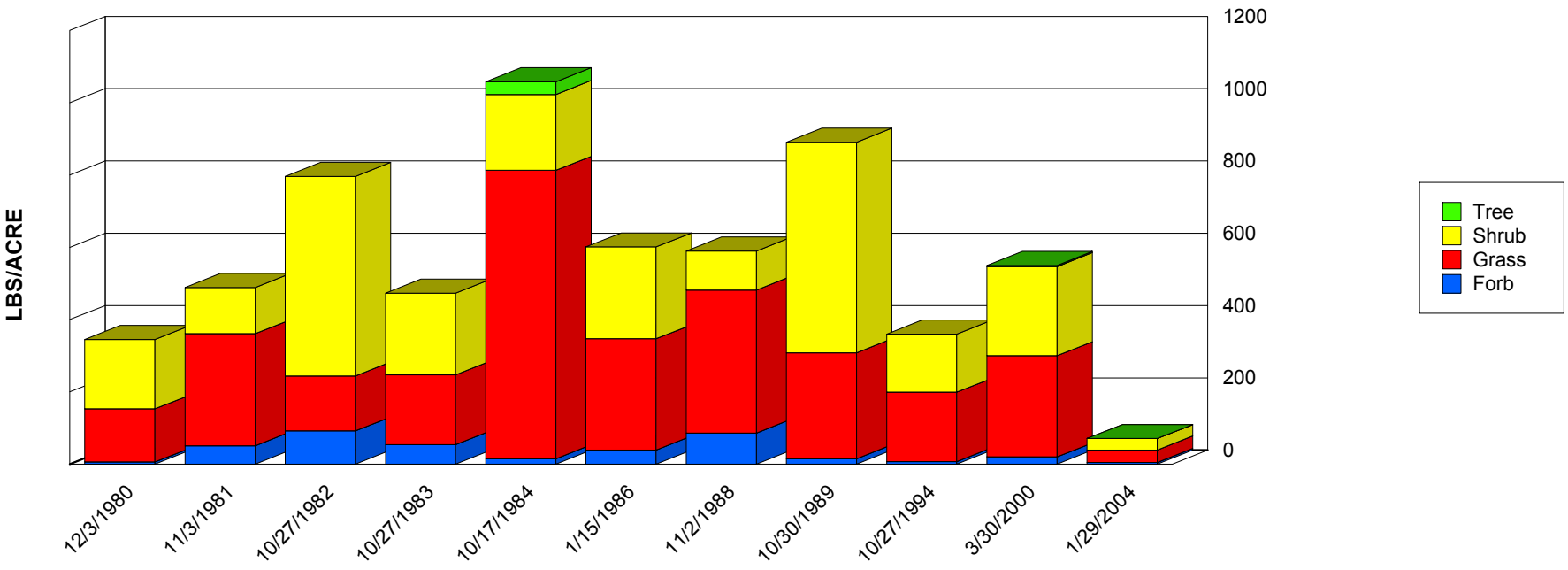
SITE NAME LIKE	65029-TWIN MILLS-D071
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004
MIN LBS TO GRAPH	1
SELECTED ECOSITE	070BY055NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	ANHA	210	252	0.00	96.00	36.83	40.90
2	Grass	ANSC2	315	420	0.00	429.00	70.56	130.27
3	Grass	EROX	63	105	0.00	28.00	12.00	11.20
3	Grass	PAST6	63	105	1.00	8.00	5.17	2.54
5	Grass	BOHI2	63	105	0.00	71.00	16.50	19.99
6	Grass	ARIST	63	105	0.00	165.00	89.36	43.95
7	Grass	LECO	63	105	3.00	93.00	36.34	26.87
8	Grass	SPCR	147	210	0.00	38.00	24.09	10.91
9	Grass	STCO4	126	168	0.00	26.00	10.25	10.35
10	Grass	BOER4	63	105	1.00	13.00	4.75	4.92
13	Grass	BOCU	63	105	1.84	32.00	13.89	8.11
15	Grass	CEPA7	0	21	0.00	7.00	3.60	2.33
19	Grass	BOGR2	21	63	2.00	4.00	3.00	1.00
19	Grass	TRIDE	21	63	4.00	18.00	11.00	7.00
21	Forb	ERAN4	21	63	5.00	35.00	20.00	15.00
22	Forb	AMBRO	0	42	1.00	85.00	43.00	42.00
22	Forb	AMPS	0	42	8.00	32.00	20.00	12.00
23	Forb	AAFF	42	84	0.00	86.00	14.30	24.61
24	Forb	PPFF	42	84	0.00	6.00	4.20	2.40
26	Shrub	QUHA3	0	252	16.12	267.00	144.83	60.61
27	Tree	YUEL	63	105	0.00	35.00	12.67	15.84
29	Shrub	GUSA2	21	42	1.00	44.00	19.46	12.86
30	Shrub	ARFI2	105	147	0.00	136.00	23.00	42.95
34	Shrub	PPSS	21	63	0.00	1.00	0.50	0.50
34	Shrub	SENEC2	21	63	2.00	180.00	91.00	89.00
35	Shrub	PRGL2	0	0	0.67	221.00	74.58	75.23

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV



Production Lbs/Acre Trends

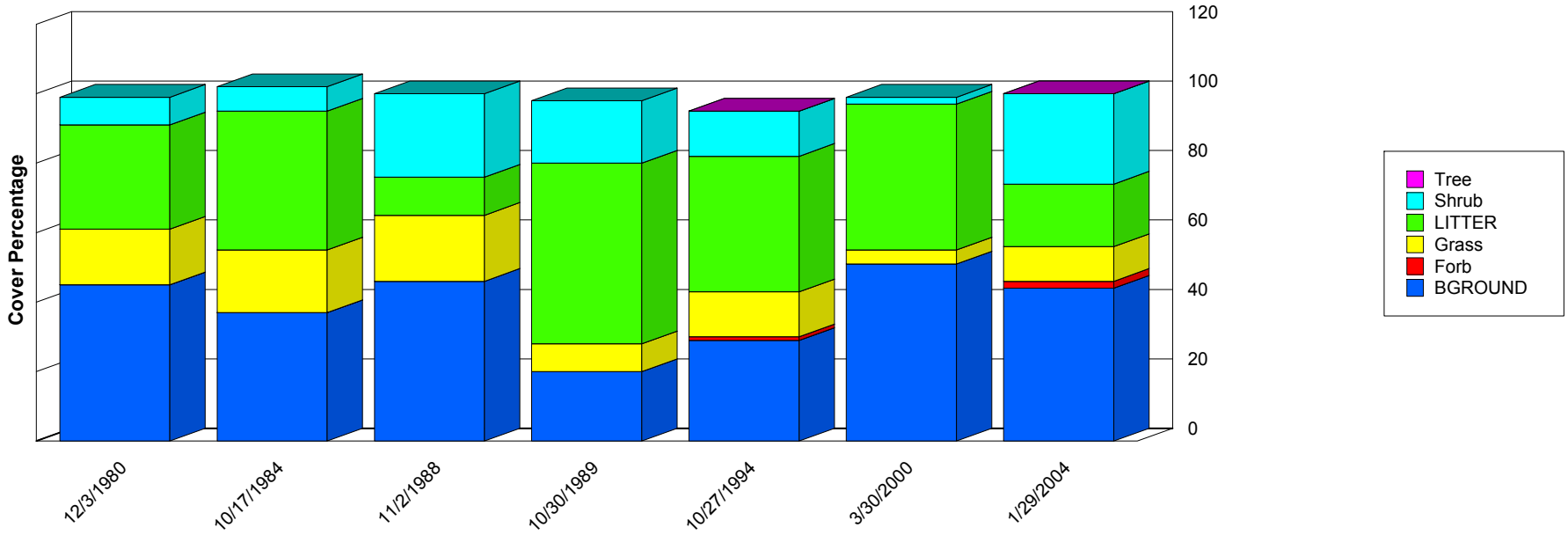


	12/3/1980	11/3/1981	10/27/1982	10/27/1983	10/17/1984	1/15/1986	11/2/1988	10/30/1989	10/27/1994	3/30/2000	1/29/2004
Forb	**6.00**	**51.00**	**92.00**	**54.00**	**15.00**	**39.00**	**86.00**	**15.00**	**7.00**	**20.00**	**4.75**
Grass	**147.00**	**310.00**	**152.00**	**193.00**	**798.00**	**308.00**	**396.00**	**293.00**	**192.00**	**280.00**	**34.54**
Shrub	**192.00**	**128.00**	**552.00**	**226.00**	**210.00**	**254.00**	**108.00**	**583.00**	**161.00**	**247.00**	**31.52**
Tree	**0.00**	**0.00**	**0.00**	**0.00**	**35.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.00**	**0.00**
Total	**345.00**	**489.00**	**796.00**	**473.00**	**1,058.00**	**601.00**	**590.00**	**891.00**	**360.00**	**550.00**	**70.81**

Report Parameters

SITE NAME LIKE	65029-TWIN MILLS-D071
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

Ground Cover Trends



	12/3/1980	10/17/1984	11/2/1988	10/30/1989	10/27/1994	3/30/2000	1/29/2004
BGROUND	45.00	37.00	46.00	20.00	29.00	51.00	44.00
Forb	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Grass	16.00	18.00	19.00	8.00	13.00	4.00	10.00
LITTER	30.00	40.00	11.00	52.00	39.00	42.00	18.00
Shrub	8.00	7.00	24.00	18.00	13.00	2.00	26.00
Tree	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.00	102.00	100.00	98.00	95.00	99.00	100.00

Report Parameters

SITE NAME LIKE	65029-TWIN MILLS-D071
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2004

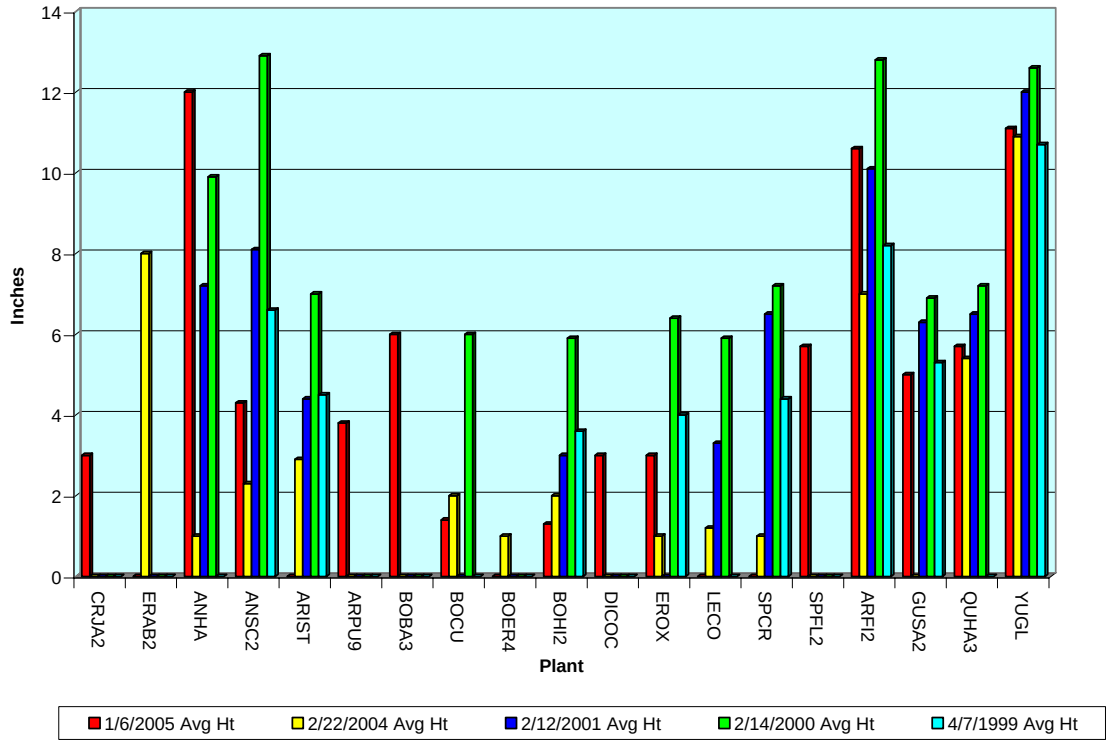
Robel Pole Summary over Time Report

Report Parameters
SITE NAME LIKE 65029-EAST #1 (NO)-D073
ON/AFTER 10/01/1998
ON/BEFORE 09/30/2005

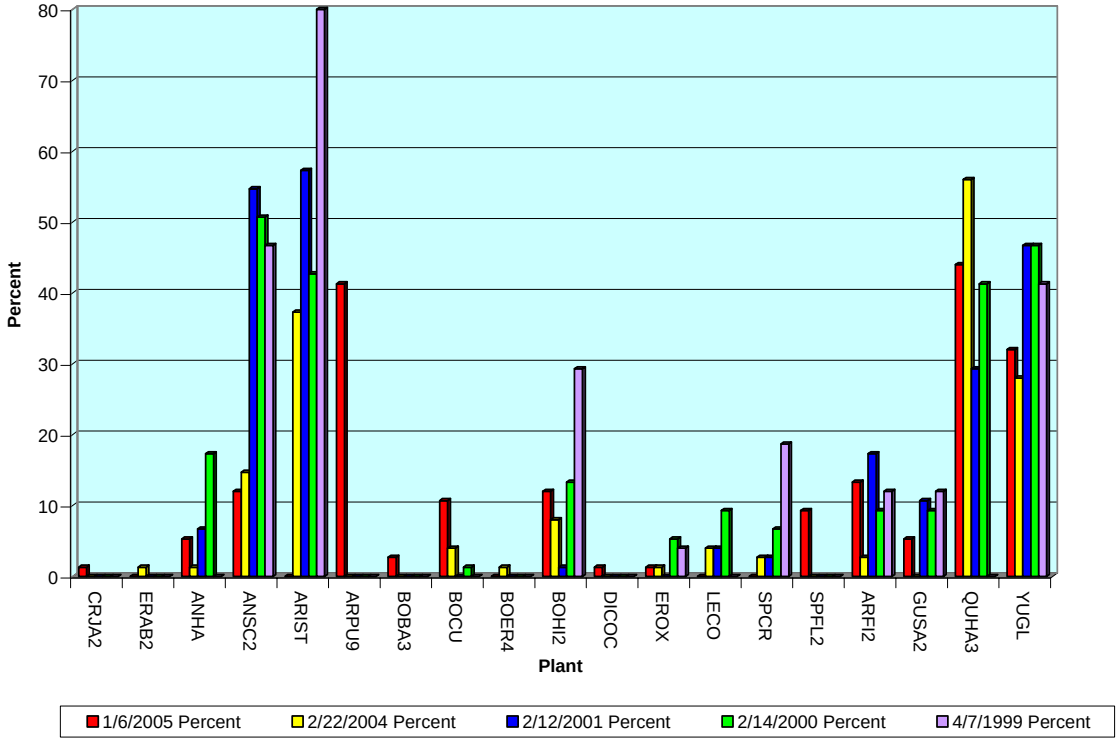
Primary Obstructions	**65029-EAST #1 (NO)-D073**	**65029-EAST #1 (NO)-D073**	**65029-EAST #1 (NO)-D073**	**65029-EAST #1 (NO)-D073**	**65029-EAST #1 (NO)-D073**
	01/06/2005	**02/22/2004**	**02/12/2001**	**02/14/2000**	**04/07/1999**
Flag Stations	0	0	0	6	0
	% Hits	% Hits	% Hits	% Hits	% Hits
BGROUND	38.7 %	60.0 %	54.7 %	32.0 %	49.3 %
LITTER	37.3 %	29.3 %	42.7 %	37.3 %	22.7 %
ARFI2	2.7 %	0.0 %	0.0 %	1.3 %	0.0 %
QUHA3	2.7 %	2.7 %	0.0 %	0.0 %	0.0 %
YUGL	2.7 %	1.3 %	0.0 %	2.7 %	0.0 %
ANHA	0.0 %	0.0 %	0.0 %	4.0 %	0.0 %
ANSC2	0.0 %	1.3 %	0.0 %	1.3 %	5.3 %
ARIST	0.0 %	2.7 %	1.3 %	8.0 %	10.7 %
ARPU9	10.7 %	0.0 %	0.0 %	0.0 %	0.0 %
BOCU	0.0 %	1.3 %	0.0 %	0.0 %	0.0 %
BOHI2	4.0 %	0.0 %	1.3 %	12.0 %	9.3 %
DICOC	1.3 %	0.0 %	0.0 %	0.0 %	0.0 %
LECO	0.0 %	1.3 %	0.0 %	1.3 %	0.0 %
SPCR	0.0 %	0.0 %	0.0 %	0.0 %	2.7 %

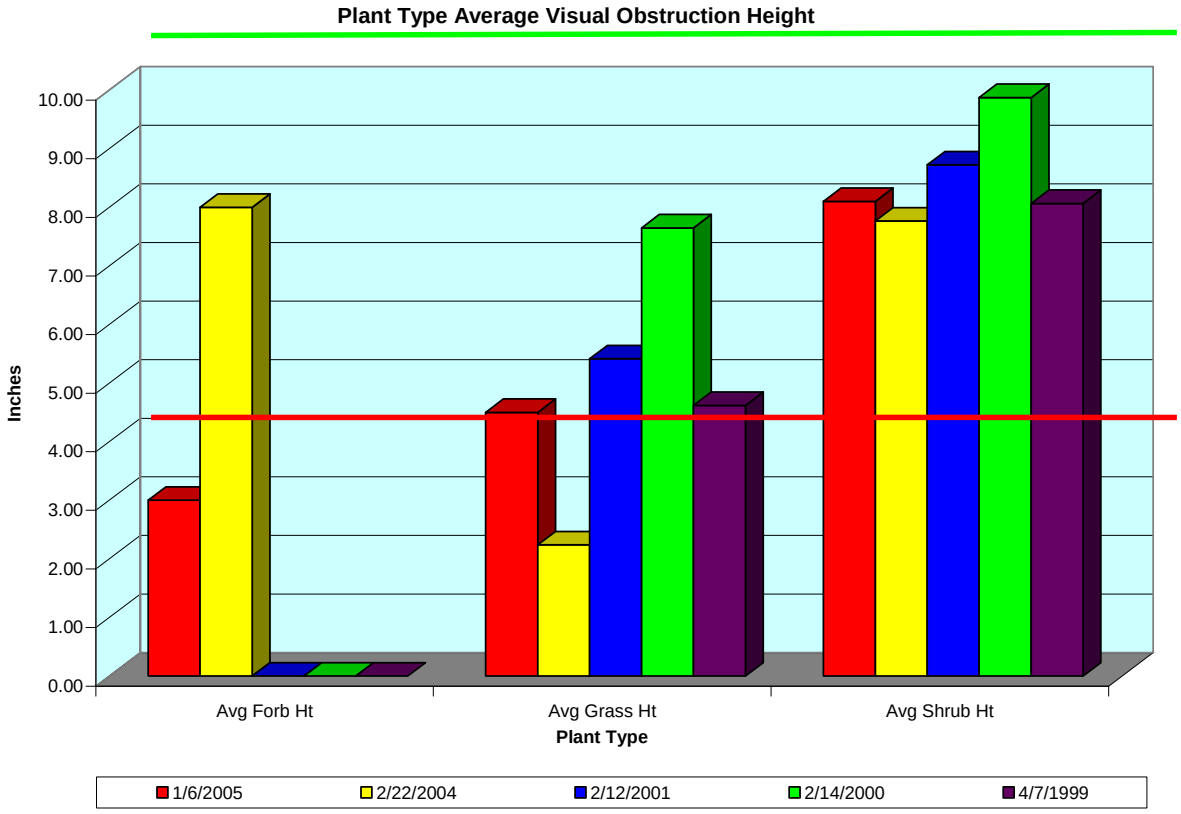
Secondary Obstructions	65029-EAST #1 (NO)-D073		65029-EAST #1 (NO)-D073		65029-EAST #1 (NO)-D073		65029-EAST #1 (NO)-D073		65029-EAST #1 (NO)-D073	
	01/06/2005		02/22/2004		02/12/2001		02/14/2000		04/07/1999	
	Percent	Avg Ht	Percent	Avg Ht	Percent	Avg Ht	Percent	Avg Ht	Percent	Avg Ht
ANHA	5.3	12.0	1.3	1.0	6.7	7.2	17.3	9.9	0.0	0.0
ANSC2	12.0	4.3	14.7	2.3	54.7	8.1	50.7	12.9	46.7	6.6
ARFI2	13.3	10.6	2.7	7.0	17.3	10.1	9.3	12.8	12.0	8.2
ARIST	0.0	0.0	37.3	2.9	57.3	4.4	42.7	7.0	80.0	4.5
ARPU9	41.3	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOBA3	2.7	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOCU	10.7	1.4	4.0	2.0	0.0	0.0	1.3	6.0	0.0	0.0
BOER4	0.0	0.0	1.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0
BOHI2	12.0	1.3	8.0	2.0	1.3	3.0	13.3	5.9	29.3	3.6
CRJA2	1.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DICOC	1.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ERAB2	0.0	0.0	1.3	8.0	0.0	0.0	0.0	0.0	0.0	0.0
EROX	1.3	3.0	1.3	1.0	0.0	0.0	5.3	6.4	4.0	4.0
GUSA2	5.3	5.0	0.0	0.0	10.7	6.3	9.3	6.9	12.0	5.3
LECO	0.0	0.0	4.0	1.2	4.0	3.3	9.3	5.9	0.0	0.0
QUHA3	44.0	5.7	56.0	5.4	29.3	6.5	41.3	7.2	0.0	0.0
SPCR	0.0	0.0	2.7	1.0	2.7	6.5	6.7	7.2	18.7	4.4
SPFL2	9.3	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YUGL	32.0	11.1	28.0	10.9	46.7	12.0	46.7	12.6	41.3	10.7

Average Visual Obstruction Height



Plant Composition




Plant Type Average Visual Obstruction Height
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Inches
Avg Forb Ht
Avg Grass Ht
Avg Shrub Ht
Plant Type
1/6/2005
2/22/2004
2/12/2001
2/14/2000
4/7/1999

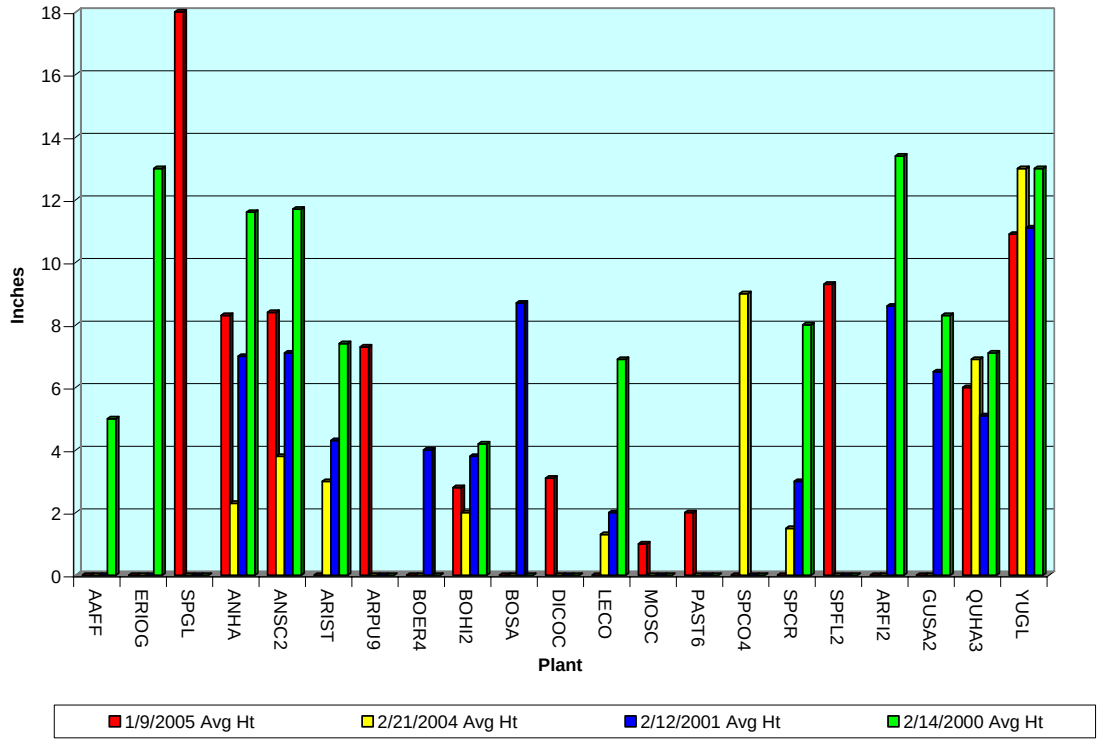
Robel Pole Summary over Time Report

Report Parameters
SITE NAME LIKE 65029-EAST #2 (SE)-D074
ON/AFTER 10/01/1998
ON/BEFORE 09/30/2005

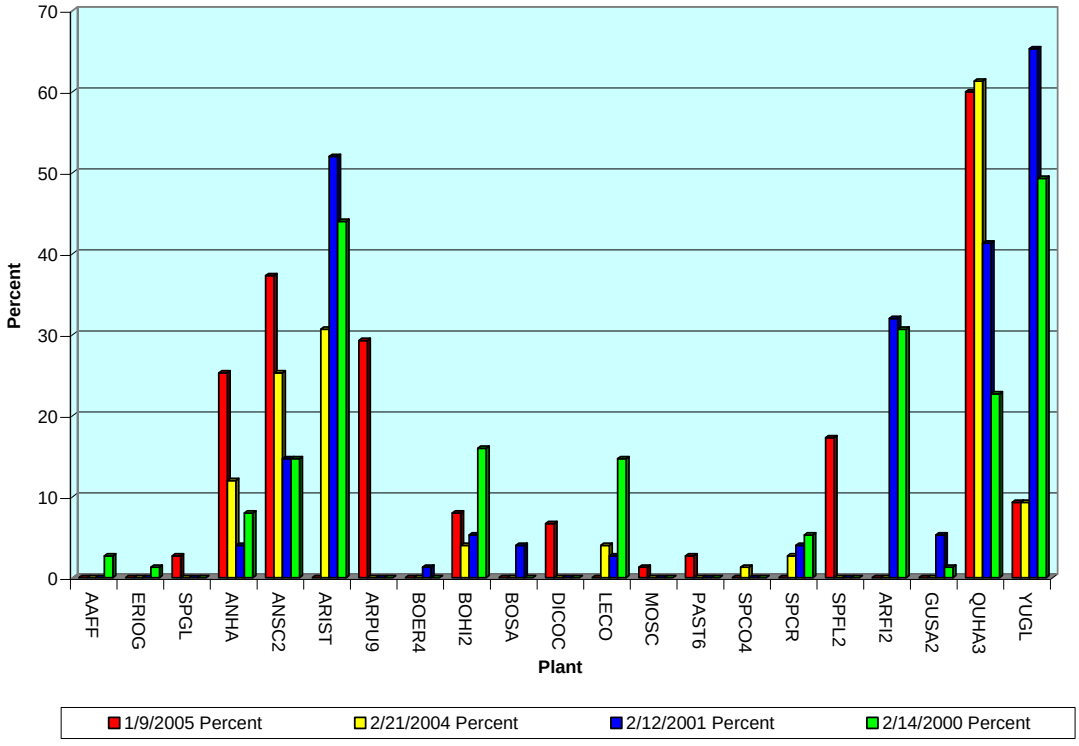
Primary Obstructions	**65029-EAST #2 (SE)-D074**	**65029-EAST #2 (SE)-D074**	**65029-EAST #2 (SE)-D074**	**65029-EAST #2 (SE)-D074**
	01/09/2005	**02/21/2004**	**02/12/2001**	**02/14/2000**
Flag Stations	4	0	0	3
	% Hits	% Hits	% Hits	% Hits
BGROUND	48.0 %	53.3 %	62.7 %	33.3 %
LITTER	30.7 %	34.7 %	34.7 %	30.7 %
ARFI2	0.0 %	0.0 %	0.0 %	1.3 %
MOSC	1.3 %	0.0 %	0.0 %	0.0 %
QUHA3	4.0 %	4.0 %	0.0 %	2.7 %
YUGL	1.3 %	0.0 %	0.0 %	5.3 %
ANHA	8.0 %	5.3 %	0.0 %	0.0 %
ANSC2	1.3 %	1.3 %	0.0 %	1.3 %
ARIST	0.0 %	1.3 %	2.7 %	10.7 %
ARPU9	1.3 %	0.0 %	0.0 %	0.0 %
BOHI2	1.3 %	0.0 %	0.0 %	10.7 %
LECO	0.0 %	0.0 %	0.0 %	2.7 %
SPCR	0.0 %	0.0 %	0.0 %	1.3 %
SPFL2	1.3 %	0.0 %	0.0 %	0.0 %
SPGL	1.3 %	0.0 %	0.0 %	0.0 %

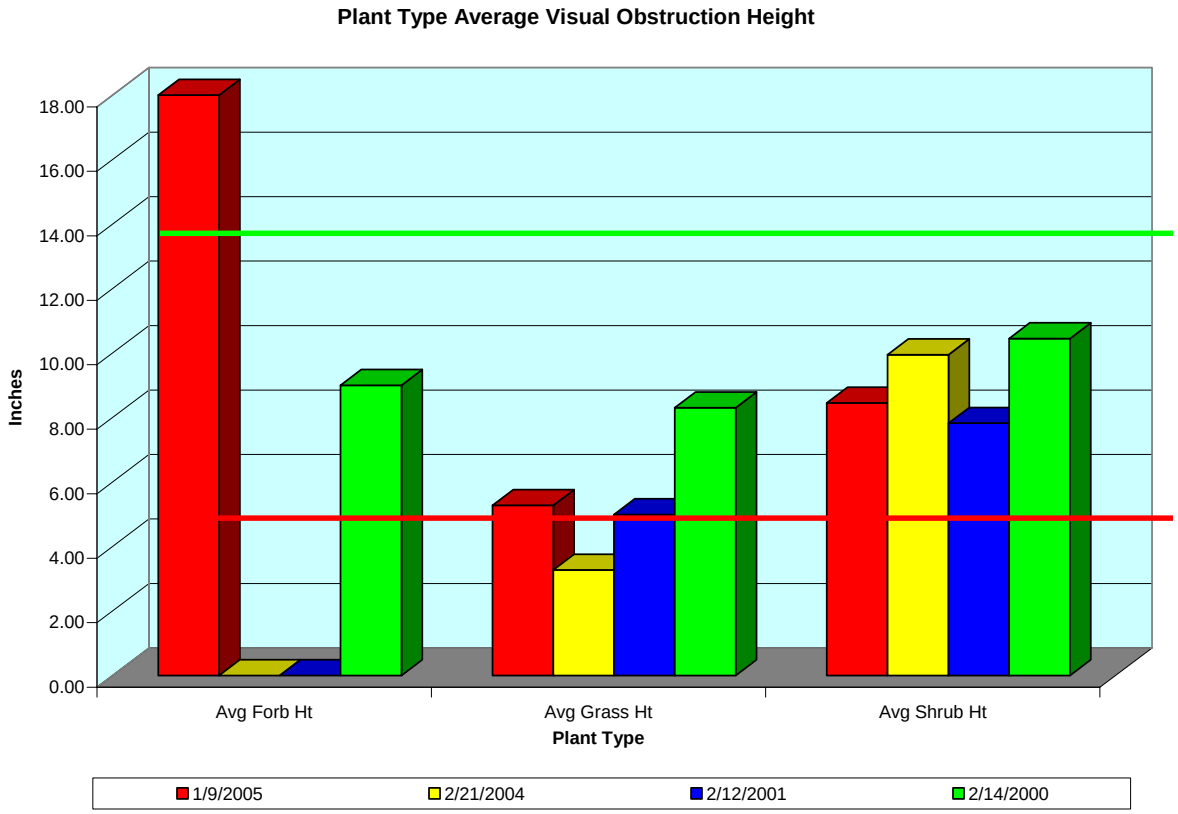
Secondary Obstructions	65029-EAST #2 (SE)-D074		65029-EAST #2 (SE)-D074		65029-EAST #2 (SE)-D074		65029-EAST #2 (SE)-D074	
	01/09/2005		02/21/2004		02/12/2001		02/14/2000	
	Percent	Avg Ht	Percent	Avg Ht	Percent	Avg Ht	Percent	Avg Ht
AAFF	0.0	0.0	0.0	0.0	0.0	0.0	2.7	5.0
ANHA	25.3	8.3	12.0	2.3	4.0	7.0	8.0	11.6
ANSC2	37.3	8.4	25.3	3.8	14.7	7.1	14.7	11.7
ARFI2	0.0	0.0	0.0	0.0	32.0	8.6	30.7	13.4
ARIST	0.0	0.0	30.7	3.0	52.0	4.3	44.0	7.4
ARPU9	29.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0
BOER4	0.0	0.0	0.0	0.0	1.3	4.0	0.0	0.0
BOHI2	8.0	2.8	4.0	2.0	5.3	3.8	16.0	4.2
BOSA	0.0	0.0	0.0	0.0	4.0	8.7	0.0	0.0
DICOC	6.7	3.1	0.0	0.0	0.0	0.0	0.0	0.0
ERIOG	0.0	0.0	0.0	0.0	0.0	0.0	1.3	13.0
GUSA2	0.0	0.0	0.0	0.0	5.3	6.5	1.3	8.3
LECO	0.0	0.0	4.0	1.3	2.7	2.0	14.7	6.9
MOSC	1.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0
PAST6	2.7	2.0	0.0	0.0	0.0	0.0	0.0	0.0
QUHA3	60.0	6.0	61.3	6.9	41.3	5.1	22.7	7.1
SPCO4	0.0	0.0	1.3	9.0	0.0	0.0	0.0	0.0
SPCR	0.0	0.0	2.7	1.5	4.0	3.0	5.3	8.0
SPFL2	17.3	9.3	0.0	0.0	0.0	0.0	0.0	0.0
SPGL	2.7	18.0	0.0	0.0	0.0	0.0	0.0	0.0
YUGL	9.3	10.9	9.3	13.0	65.3	11.1	49.3	13.0

Average Visual Obstruction Height



Plant Composition




Plant Type Average Visual Obstruction Height
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Inches
Avg Forb Ht
Avg Grass Ht
Avg Shrub Ht
Plant Type
1/9/2005
2/21/2004
2/12/2001
2/14/2000

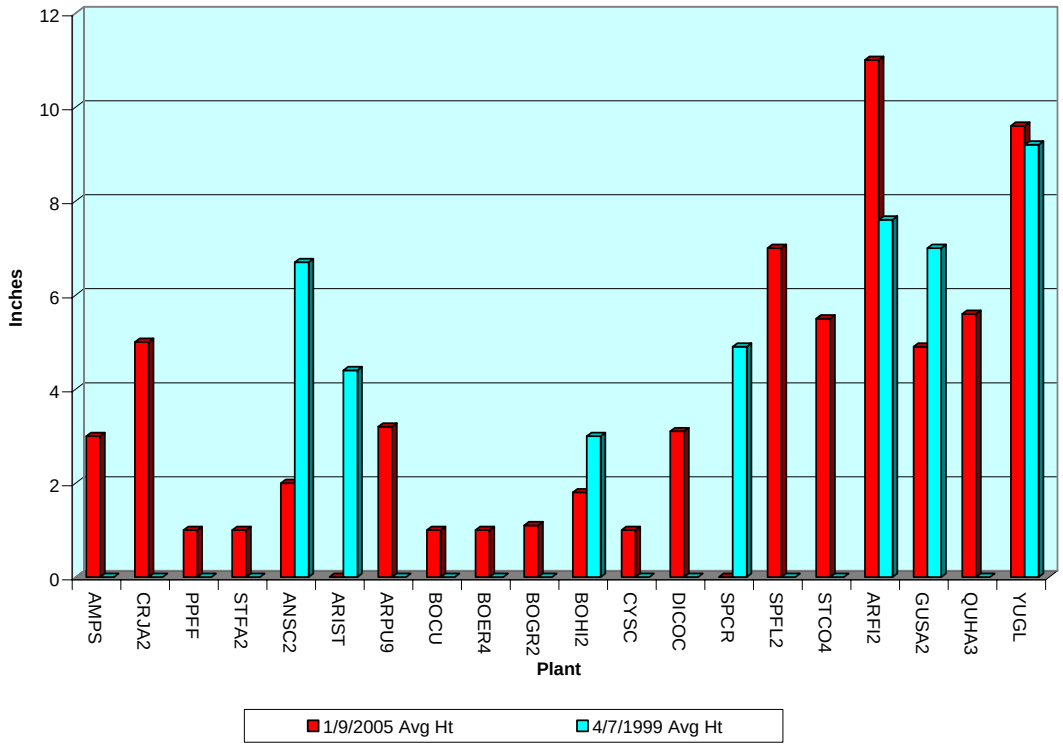
Robel Pole Summary over Time Report

Report Parameters
SITE NAME LIKE 65029-SOUTH #3-D075
ON/AFTER 10/01/1998
ON/BEFORE 09/30/2005

Primary Obstructions	**65029-SOUTH #3-D075**	**65029-SOUTH #3-D075**
	01/09/2005	**04/07/1999**
Flag Stations	0	0
	% Hits	% Hits
BGROUND	36.0 %	70.7 %
LITTER	30.7 %	16.0 %
ARFI2	0.0 %	2.7 %
QUHA3	2.7 %	0.0 %
YUGL	1.3 %	2.7 %
ANSC2	0.0 %	1.3 %
ARIST	0.0 %	4.0 %
ARPU9	5.3 %	0.0 %
BOCU	1.3 %	0.0 %
BOER4	0.0 %	1.3 %
BOGR2	4.0 %	0.0 %
BOHI2	6.7 %	1.3 %
DICOC	6.7 %	0.0 %
SPFL2	1.3 %	0.0 %
STCO4	1.3 %	0.0 %
AMPS	1.3 %	0.0 %
CRJA2	1.3 %	0.0 %

Secondary Obstructions	65029-SOUTH #3-D075		65029-SOUTH #3-D075	
	01/09/2005		04/07/1999	
	Percent	Avg Ht	Percent	Avg Ht
AMPS	1.3	3.0	0.0	0.0
ANSC2	2.7	2.0	16.0	6.7
ARFI2	13.3	11.0	33.3	7.6
ARIST	0.0	0.0	81.3	4.4
ARPU9	45.3	3.2	0.0	0.0
BOCU	5.3	1.0	0.0	0.0
BOER4	1.3	1.0	0.0	0.0
BOGR2	6.7	1.1	0.0	0.0
BOHI2	20.0	1.8	6.7	3.0
CRJA2	2.7	5.0	0.0	0.0
CYSC	1.3	1.0	0.0	0.0
DICOC	22.7	3.1	0.0	0.0
GUSA2	13.3	4.9	1.3	7.0
PPFF	1.3	1.0	0.0	0.0
QUHA3	36.0	5.6	0.0	0.0
SPCR	0.0	0.0	29.3	4.9
SPFL2	6.7	7.0	0.0	0.0
STCO4	2.7	5.5	0.0	0.0
STFA2	1.3	1.0	0.0	0.0
YUGL	42.7	9.6	68.0	9.2

Average Visual Obstruction Height



Plant Composition